



DATE: August 28, 2019

AGENDA ITEM #5

## AGENDA REPORT

**TO:** Complete Streets Commission

**FROM:** Sean K. Gallegos, Associate Planner

**SUBJECT:** 4350 El Camino Real – New Multiple-Family Development

### RECOMMENDATION:

Recommend approval of Multiple-Family Design Review Application 18-D-11 to the Planning Commission subject to the staff recommendations

---

### PROJECT DESCRIPTION

This is a Design Review application for a new multiple-family development on a 0.66-acre site at 4350 El Camino Real. The proposal includes 47 condominium units in a five-story building along El Camino Real with two levels of underground parking and a ground level common area at the rear of the building. The site is located at the southeast corner of the intersection of El Camino Real and Los Altos Avenue, and it is currently occupied by a gasoline service station, surface parking, and perimeter landscaping. The 1,466 square-foot gasoline service station building includes a convenience market, auto repair shop, and pump islands covered by fuel canopies. The project site is designated as Thoroughfare Commercial in the General Plan and zoned CT (Commercial Thoroughfare).

The project's Traffic Study is included as Attachment A, and a condensed version of the project plans that focus on the project's bicycle, pedestrian, circulation and parking amenities is included as Attachment B.

### BACKGROUND

The role of the Complete Streets Commission is to be an advisory body to City Council on bicycle, pedestrian, parking and traffic matters. For development applications, the Commission's role is not specifically defined, but in order to be consistent with the past role of the Bicycle and Pedestrian Advisory Commission, the Commission should review and provide a recommendation on the elements of the application that pertain to bicycle, pedestrian, parking and traffic issues.

With regard to traffic analysis, the Circulation Element in the General Plan includes an implementing program (C8) that outlines the criteria for reviewing traffic and circulation for new development as follows:

Evaluate development proposals and design roadway and access improvements based on established Level of Service standards and vehicle trip distribution to minimize impact on local residential and collector streets:

- 1) Require public review of any development project or other proposal that causes an intersection to degrade by one or more levels of service (e.g., LOS A to B, LOS B to D);

- 2) Require a transportation analysis for all development projects resulting in 50 or more net new daily trips. The analysis shall identify potential impacts to intersection and roadway operations, project access, and non-automobile travel modes, and shall identify feasible improvements or project modifications to reduce or eliminate impacts. Impact significance should be consistent with the criteria maintained by the Santa Clara Valley Transportation Authority. City staff should have the discretion to require focused studies regarding access, sight distance, and other operational and safety issues;
- 3) As part of the development review process, the primary access for major traffic generators should be established on arterial roadways, and overall access should be designed to minimize traffic intrusion to residential neighborhoods; and
- 4) Only after preparation of an environmental impact report with associated findings, accept Level of Service E or F operations at City-monitored signalized intersections after finding that no practical and feasible improvements can be implemented to mitigate the lower levels of service. A proposed development that causes or exacerbates LOS E or F operations and causes a significant intersection impact should be considered for approval if it will provide a clear, overall benefit to the City (e.g., library expansion or relocation, new community center).

With regards to bicycle parking standards, the City does not have an adopted ordinance, but does rely on the Valley Transportation Authority (VTA) Bicycle Technical Guidelines as a recommended bicycle parking guideline. For general multi-family dwellings, VTA recommends one Class I space per three units and one Class II space per 15 units. A Class I space is defined as one that protects the entire bicycle and its components from theft, vandalism or inclement weather and is appropriate for long-term parking (two hours to all day). A Class II space is defined as a rack to which the frame and at least one wheel can be secured with a user provided U-lock or padlock and cable and is appropriate for short-term parking (less than two hours).

## **DISCUSSION**

### Traffic and Site Circulation

The traffic produced by a new development and the locations where that traffic would appear are 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 entering and exiting the site is estimated for the AM and PM peak hours. As part of the project trip distribution, standard trip generation rates were applied for the proposed development in accordance with the Institute of Transportation Engineers (ITE) manual entitled Trip Generation, 10th edition. The trip rates for a Multiple-family Housing – Mid-Rise land use were used for the project to estimate total trips generated by the proposed multiple-family building. Daily and peak hour trips generated by the existing gas station on the site were counted on Wednesday May 29, 2019.

Many of the trips generated by gas stations are referred to as “pass-by” trips. Pass-by trips are intermediate stops on the way from an origin to a destination without diverting to another roadway. Typically, gas stations are an immediate stop along the primary trip destination. Thus, a pass-by trip reduction was applied to the gas station. Trips generated by the existing gas station were then compared to the trips that would be generated by the proposed residential development. Project trip generation estimates are shown in Table 1 below.

Table 1: Project Trip Generation											
		AM Peak Hour Trips				PM Peak Hour Trips				Daily Rate	Daily Trips
Land Use	Size	Rate	In	Out	Total	Rate	In	Out	Total		
Mid-Rise Multifamily Housing <sup>1</sup>	47 units	0.36	4	13	17	0.44	13	8	21	5.44	256
Existing Gasoline/Service Station <sup>2</sup>	12 fuel pumps		-31	-29	-60	-	-44	-43	-87	76.75	-921
-Pass-by trip reduction <sup>3</sup>	-		19	18	37	-	25	24	49	-	543
<i>Net Existing Trips</i>	-		-12	-11	-23		-19	-19	-55		-378
<b>Net Project Trip Generation</b>			<b>-8</b>	<b>-2</b>	<b>-6</b>		<b>-6</b>	<b>-11</b>	<b>-17</b>		<b>-122</b>

Notes:

Trip rates for multifamily and gas station pass-by are from the ITE Trip Generation Manual, 10<sup>th</sup> Edition, 2017.

<sup>1</sup>Mid-Rise Multifamily Housing (Land Use 221) average rates expressed in trips per dwelling unit (DU) are used.

<sup>2</sup>Existing gas station trips from driveway count 5/29/19.

<sup>3</sup>Average pass-by trip reduction percentage of 62 percent in the AM peak hour and 56 percent in the PM peak hour. Daily reduction percentage is the average of AM and PM peak-hour percentage.

The existing gasoline service station generates an average of 378 daily trips (ADT), with 23 AM peak hour trips and 38 PM peak hour trips. The proposed project, with 47 new dwelling units, will generate 256 ADT, with 17 AM peak hour trips and 21 PM peak hour trips. This will result in a net reduction of 122 ADT, and a decrease of 6 AM peak hour trips and a decrease of 17 PM peak hour trips. Since this is under the City’s threshold of 50 net new daily trips, a full transportation impact analysis (TIA) is not required for the project. The project’s Traffic Study (Attachment A) provides information to support this conclusion as well as an analysis of project’s site circulation and access.

The Traffic Study includes an analysis of the nearby street network and the intersections of El Camino Real and Los Altos Avenue, and El Camino Real and Del Medio Avenue that will receive additional traffic from the project, and evaluated the traffic conditions for four existing and future scenarios as follows:

- Existing Conditions. Existing AM and PM peak-hour traffic volumes at study intersections were based on new traffic counts collected in May 2019.
- Existing Plus Project Conditions. Existing plus project conditions reflect the projected traffic volumes on the existing roadway network with completion of the project.

- Near-Term Conditions. Near-term traffic volumes were estimated by adding to existing traffic counts the additional traffic generated by approved but not yet constructed developments in the area. The study uses a growth factor of two-percent per year until the project opening date to represent traffic growth on El Camino Real.
- Near-Term plus Project Conditions. Near-term plus project traffic volumes were estimated by adding to near-term traffic volumes the additional traffic generated by the project. Near-term plus project conditions were evaluated relative to near-term conditions in order to determine potential project impacts.

The results of the level of service analysis for existing plus project and near-term plus project scenarios are shown in Table 2 and 3, respectively. The intersection level of service calculation sheets are included in Appendix B of the Traffic Study (Attachment A).

Table 2: Existing Plus Project Intersection Levels of Service							
Intersections	Peak Hour	Existing		Existing plus Project			
		Delay (sec)	LOS	Delay (sec)	LOS	Δ in Critical Delay	Δ in Critical V/C
1. El Camino Real & Los Altos Avenue	AM	21.1	C+	21.2	C+	0.1	0.011
	PM	13.5	B	12.0	B+	-1.5	-0.019
2. El Camino Real & Del Medio Avenue	AM	29.4	C	29.7	C	0.3	0.004
	PM	21.5	C+	21.8	C+	0.2	-0.001

As shown in Table 2 above, the proposed project would not increase traffic volumes at affected intersections beyond the City’s acceptable LOS standards in the existing plus project scenario.

Table 3: Near-Term Plus Project Intersection Levels of Service							
Intersections	Peak Hour	Near-Term		Near-Term plus Project			
		Delay (sec)	LOS	Delay (sec)	LOS	Δ in Critical Delay	Δ in Critical V/C
1. El Camino Real & Los Altos Avenue	AM	19.9	B-	20.1	C+	0.2	0.011
	PM	12.8	B	11.3	B+	-1.5	-0.019
2. El Camino Real & Del Medio Avenue	AM	28.3	C	28.6	C	0.3	0.004
	PM	20.8	C+	21.0	C+	0.2	-0.001

As shown in Table 3 above, the proposed project would not increase traffic volumes at the affected intersections beyond the City’s acceptable LOS standards in the near-term plus project scenario. The amount of traffic generated would be low, and there would be no impact on the greater transportation network.

The onsite vehicle circulation includes a driveway on El Camino Real in roughly the same location as an existing driveway entrance. The project will remove one existing driveway on El Camino Real and two driveways on Los Altos Avenue. To minimize conflicts with the existing street circulation patterns, staff and the applicant identified El Camino Real as the most appropriate street to provide

site access. The Traffic Study also analyzed the driveway's sight-distance, ramp design, on-site (garage) vehicle circulation, garbage truck access and did not identify any design or functionality issues with these elements. The Traffic Study provided one recommendation to enhance vehicle circulation and parking usage as follows:

- A STOP sign and stop bar at the garage exit to advise motorists to STOP before exiting the driveway.

The recommendation has been incorporated into staff's recommendations, which can be found at the end of the report.

### Parking

The onsite parking includes two levels of below-grade parking spaces to serve the residential units. For multiple-family projects that include at least 10 percent of the units as affordable (below market rate) an on-site parking requirement of one parking space for one-bedrooms and two parking spaces for two to three bedrooms is permitted (Zoning Code Section 14.28.040.G). Since the project has 47 units, a minimum of 84 on-site parking spaces are required by the Code. As shown on the project plans, the project is providing a total of 84 on-site parking spaces in the underground garage for the condominiums. Thus, the project meets the Zoning Code's on-site parking requirement for a project that includes affordable units and is accessible to public transit. Therefore, the parking supply is adequate to serve a project of this size and type. It should be noted that since the project is within one-half mile of a major transit stop and located within a high-quality transit corridor, it is eligible for a further on-site parking reduction. However, the applicant has not made such a request for this project.

### Transit Stop

The project site is proximate to bus stops for VTA routes 22 and 522, with the nearest bus stop located adjacent to the site on El Camino Real. The site is generally well-served by transit; with VTA bus stops located on both sides of El Camino Real and the San Antonio Caltrain station located approximately one mile northeast of the site. The site is approximately 0.6 miles from the San Antonio Transit Center on Showers Drive, which provides access to additional VTA bus lines. Thus, the project is well placed for its residents to utilize public transit and is consistent with the Los Altos General Plan policies that encourage the use of public transit.

### Bicycle and Pedestrian

As recommended by the VTA guidelines, the project should provide at least 16 Class I bicycle parking spaces and four Class II spaces. As specified on the Lower Level Basement Plan (A2.0), a total of 30 secure bike storage spaces in a locked bicycle room are proposed, which are considered Class I equivalent. In addition, two Class II bicycle racks (four spaces) are proposed near the lobby entrances for the condominium building (see sheet A1.0). Overall, the proposed project's bicycle parking will meet and exceed the VTA Guidelines for bicycle parking spaces for a new residential use.

The proposed project would provide sidewalks and street trees along the El Camino Real and Los Altos Avenue frontages to facilitate pedestrian travel in the surrounding area. The City's Pedestrian Master Plan includes goals, policies and actions for improving the pedestrian environment in Los Altos, including planning for pedestrian accommodation and facilities that serve people of all ages and abilities, developing a safe pedestrian network, and increasing pedestrian mode share. The proposed

project would include pedestrian access points to existing facilities and would support the goals of the Pedestrian Master Plan.

Santa Rita Elementary School and Egan Junior High School are both within a one-mile radius of the proposed residential development. The City of Los Altos created Suggested Routes to Schools Maps for ½-mile and one-mile walking radii, and the most likely walking and biking routes between the project and school sites are along Los Altos Avenue and Portola Avenue.

The project will add new ADA ramps to improve connections to crosswalk across El Camino Real and Los Altos Avenue. Interior to the site, new pathways and other pedestrian amenities will be provided. The project plans include details and illustrative drawings to demonstrate the proposed pedestrian and user amenities. Overall, the project's pedestrian amenities and improvements appear to meet or exceed all applicable City policies and guidelines.

#### Environmental Review

This project will require an environmental initial study and a Mitigated Negative Declaration as required by the California Environmental Quality Act. This evaluation is currently underway and will be completed prior to review by the Planning Commission.

#### Attachments:

- A. Traffic Study, Hexagon Transportation Consultants
- B. Project Plans

## **RECOMMENDATIONS**

4350 El Camino Real – 19-D-01

1. Install a “STOP” sign and stop bar at the garage exit to advise motorists to STOP before exiting the driveway.



# HEXAGON TRANSPORTATION CONSULTANTS, INC.

---

June 21, 2019

Ms. Angie Galatolo  
c/o Alain Pinel Realtors  
167 S. San Antonio Road  
Los Altos, CA 94022

**Re: *Traffic Report for the Proposed Residential Project at 4350 El Camino Real in Los Altos, California***

Dear Ms. Galatolo:

Hexagon Transportation Consultants, Inc. has completed this traffic report for the proposed residential project at 4350 El Camino Real in Los Altos, California (see Figures 1 & 2). The project proposes to construct 47 multifamily dwelling units, including 7 below market rate (BMR) units within one building. There is currently a gasoline/service station with convenience market on the project site. The gas station currently has two driveways on El Camino Real and two driveways Los Altos Avenue. The project would eliminate three of these driveways and have one driveway on El Camino Real.

The purpose of this analysis is to identify any potentially significant traffic impacts at the intersections of El Camino Real / Los Altos Avenue and El Camino Real / Del Medio Avenue and to analyze roadway improvements that may be necessary to support the proposed uses. A trip generation analysis was conducted for the purpose of identifying the change in traffic due to the proposed development of the site. This study also includes an evaluation of site access and on-site circulation. The trip generation estimates and traffic impact analysis were calculated for the weekday AM and PM peak hours of traffic. The AM peak hour of traffic is generally between 7:00 and 9:00 AM, and the PM peak hour is typically between 4:00 and 6:00 PM. It is during these periods that the most congested traffic conditions occur on an average day.

## **Scope of Study**

The impacts of the project were evaluated following the standards and methodologies set forth by the City of Los Altos. The study determined the traffic impacts of the proposed residential development on the intersections El Camino Real / Los Altos Avenue and El Camino Real / Del Medio Avenue during the weekday AM and PM peak hours of traffic (7:00-9:00 AM and 4:00-6:00 PM). The project driveway would be located on El Camino Real.





**Figure 1**  
**Site Location and Study Intersections**

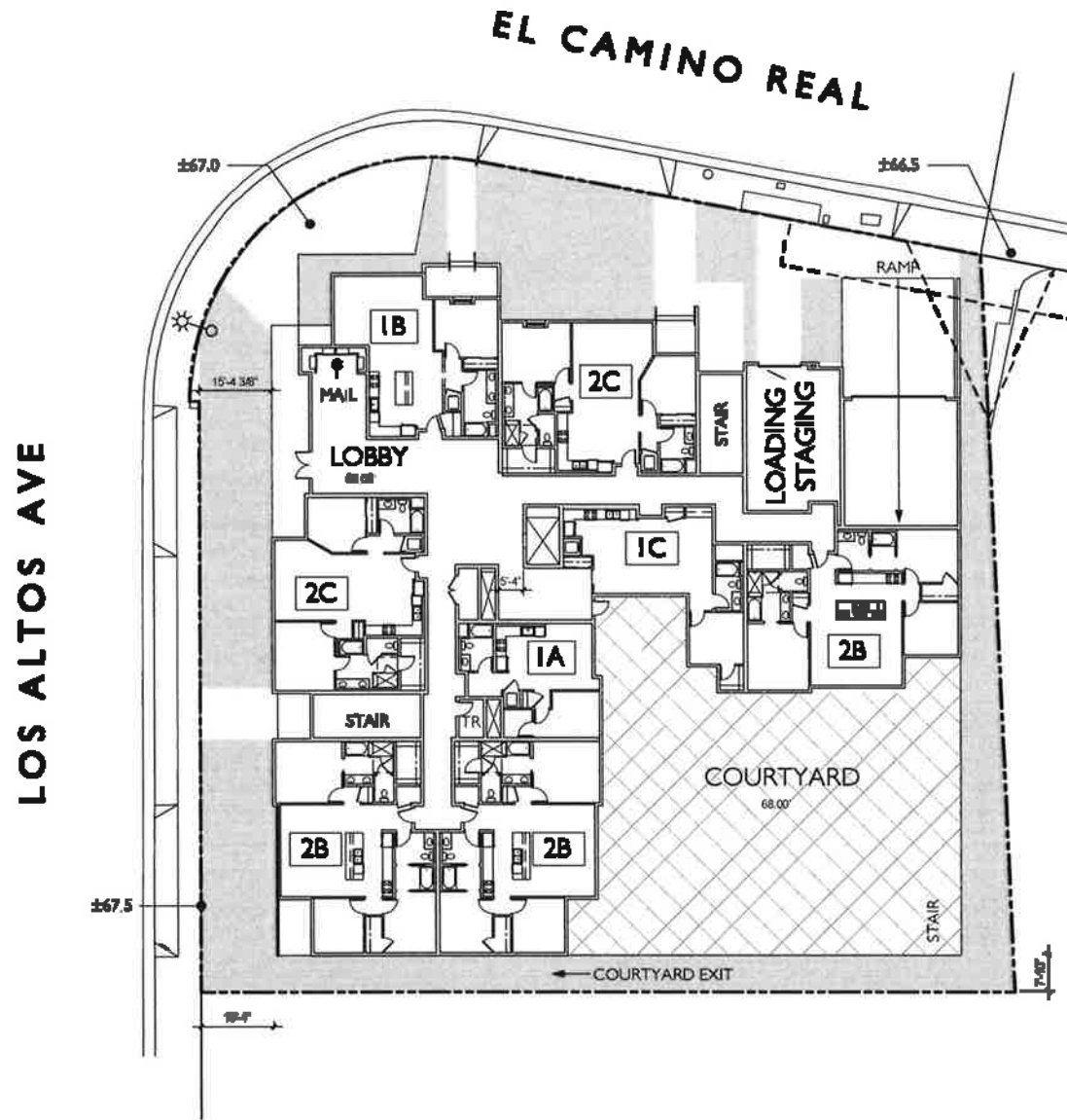


Figure 2  
Proposed Site Plan



Traffic conditions at the study intersections were analyzed for the weekday AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak hours of commute traffic, which represent the peak hours of traffic for the roadway network and the peak period of trip generation for the proposed project. Traffic conditions were evaluated for the following scenarios:

- Scenario 1:** *Existing Conditions.* Existing traffic volumes were obtained from traffic counts conducted in May 2019 and November 2017 for this study.
- Scenario 2:** *Existing Plus Project Conditions.* Existing plus project traffic volumes were estimated by adding to existing traffic volumes the trips associated with the proposed development. Existing plus project conditions were evaluated relative to existing conditions in order to determine potential project impacts.
- Scenario 3:** *Near-Term Conditions.* Near-Term traffic volumes were estimated by applying a growth factor (2 percent per year) for five years to existing traffic volumes.
- Scenario 4:** *Near-Term plus Project Conditions.* Near-Term traffic volumes with the project were estimated by adding to near-term traffic volumes the additional traffic generated by the project. Near-term plus project conditions were evaluated relative to near-term conditions in order to determine potential project impacts.

## Methodology

This section describes the methods used to determine the traffic conditions for each scenario described above. It includes descriptions of the analysis methodologies and the applicable level of service standards.

### ***Level of Service Standards and Methodology***

Traffic conditions at the study intersection 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.

The City of Los Altos evaluates intersection levels of service using the TRAFFIX software, which is based on the Highway Capacity Manual (HCM) 2000 method, for signalized intersections. Since TRAFFIX is the level of service methodology for the CMP-designated intersections, the City of Los Altos employs the CMP default values for the analysis parameters. The HCM method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. This average delay can then be correlated to a level of service. Table 1 presents the current VTA level of service definitions for signalized intersections, which replaced the older standards found in the Los Altos General Plan. The City of Los Altos level of service standard for signalized intersections is LOS D or better.



**Table 1  
 Signalized Intersection Level of Service Definitions Based on 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 12.0
B		12.1 to 18.0
B-		18.1 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 may still pass through the intersection without stopping.	20.1 to 23.0
C		23.1 to 32.0
C-		32.1 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 39.0
D		39.1 to 51.0
D-		51.1 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 60.0
E		60.1 to 75.0
E-		75.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes of such delay levels.	greater than 80.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000) p10-16. VTA Traffic Level of Service Analysis Guidelines (June 2003), Table 2.

***Signalized Intersection Impact Criteria***

According to City of Los Altos level of service standards and Valley Transportation Agency (VTA) guidelines, a development is said to create a significant adverse impact 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 degrades from an acceptable level (LOS D or better for local intersections) under no-project conditions to an unacceptable level (LOS E or F for local intersections) under project conditions, or
2. The level of service at the intersection is an unacceptable level under no-project conditions and the addition of project trips causes the average critical delay to increase by four (4) or



more seconds and causes the critical-movement volume-to-capacity ratio (V/C) to increase by one percent (.01) or more.

A significant impact is said to be satisfactorily mitigated when measures are implemented that would restore intersection conditions to its level of service standard or to an average delay that is better than no-project conditions.

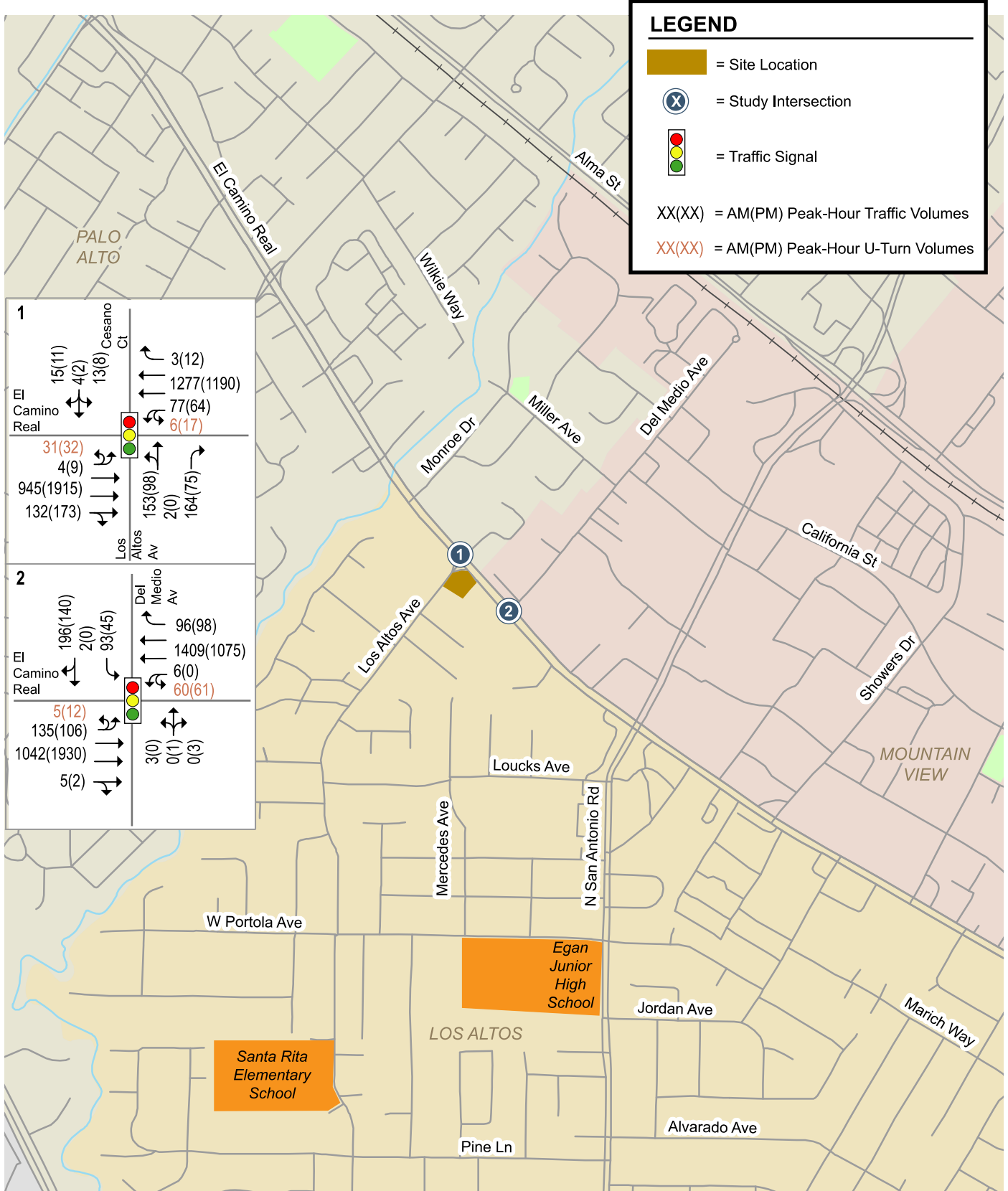
### Existing Intersection Levels of Service

The existing lane configurations at the study intersections were obtained from field observations. Existing traffic volumes were obtained from traffic counts conducted on May 29, 2019 except the AM peak hour count for the El Camino Real and Del Medio Avenue intersection. Hexagon used the available counts from November 15, 2017 for this intersection, since the Del Medio Avenue was closed during the AM peak hour for the construction of a nearby project on May 29, 2019. The existing AM and PM peak hour intersection volumes are shown graphically on Figure 3. Volumes under existing conditions are presented in Appendix A.

Intersection levels of service were evaluated against the Los Altos standards (see Table 2). The results of the analysis show that the study intersections currently operate at acceptable levels during both AM and PM peak periods. The intersection level of service calculation sheets are included in Appendix B.

**Table 2**  
**Existing Intersection Level of Service Summary**

#	Intersection	LOS Standards	Peak Hour	Count Date	Existing	
					Avg Delay	LOS
1	El Camino Real & Los Altos Avenue	D	AM	5/29/2019	21.1	C+
			PM	5/29/2019	13.5	B
2	El Camino Real & Del Medio Avenue	D	AM	11/15/2017	29.4	C
			PM	5/29/2019	21.6	C+



**Figure 3**  
Existing Intersection Lane Configurations and Traffic Volumes



## Near-Term Conditions

Near-term peak hour traffic volumes were estimated by applying a growth factor (2 percent per year) for five years to existing traffic volumes. Since there are numerous projects in the Cities of Los Altos and Mountain View that would add traffic, and El Camino Real is a major regional route, a 2 percent per year growth factor was used to represent the added traffic along El Camino Real. This is a very high growth factor and is expected to account for all known projects plus regional growth. Volumes under background conditions are presented in Appendix C. The results of the intersection level of service analysis under near-term conditions are summarized in Table 3. The results of the analysis show that the study intersection would operate at acceptable levels of service during both AM and PM peak periods under background conditions. The intersection level of service calculation sheets are included in Appendix B.

**Table 3**  
**Near-Term Condition Intersection Level of Service Summary**

#	Intersection	LOS Standards	Peak Hour	Existing		Near-Term	
				Avg Delay	LOS	Avg Delay	LOS
1	El Camino Real & Los Altos Avenue	D	AM	21.1	C+	19.9	B-
			PM	13.5	B	12.8	B
2	El Camino Real & Del Medio Avenue	D	AM	29.4	C	28.3	C
			PM	21.6	C+	20.8	C+

## Project Trip Generation

Through empirical research, data have been collected that quantify the amount of traffic produced by many types of land uses. The research is published in the Institute of Transportation Engineers' (ITE) manual entitled *Trip Generation, 10th Edition* (2017). The amount 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. The rates published in the ITE Manual for Multifamily Housing – Midrise (Land Use 221) were used to estimate the trips generated by the proposed project. Mid-rise Multifamily Housing is defined as apartments, townhouses, or condominiums that have between three and 10 levels (floors). Daily and peak hour trips generated by the existing gas station on the site were counted on Wednesday May 29, 2019.

Many of the trips generated by gas stations are referred to as “pass-by” trips. Pass-by trips are intermediate stops on the way from an origin to a destination without diverting to another roadway. Typically, gas stations are an immediate stop along the primary trip destination. Thus, a pass-by trip reduction was applied to the gas station. The pass-by rates come from the ITE *Trip Generation Handbook, 3rd Edition*. The existing gas station trip assignment is shown in Figure 4.

Hexagon compared the trips generated by the existing gas station to the trips that would be generated by the proposed residential use. As shown in the Table 4, the gas station is generating more trips than the proposed residential development. Thus, the project is estimated to eliminate 122 daily trips, including 6 fewer trips during the AM peak hour and 17 fewer trips during the PM peak hour. Thus, the project would result in a reduction in traffic at the intersections of El Camino



Real & Los Altos Avenue and El Camino Real & Del Medio Avenue, including a reduction in U-turns. Since the proposed project would add fewer than 50 new daily trips, a full transportation impact analysis is not required per the Los Altos General Plan's Circulation Element.

**Table 4**  
**Trip Generation Estimates for 4350 El Camino Real, Los Altos**

Land Use	Size	Unit	Daily		AM Peak Hour				PM Peak Hour				
			Rate	Trips	Rate	In %	In	Out	Total	Rate	In	Out	Total
<b>Proposed Uses</b>													
Mid-Rise Multifamily Housing <sup>1</sup>	47	DU	5.44	256	0.36	26%	4	13	17	0.44	13	8	21
<b>Existing Use</b>													
Gasoline/Service Station <sup>2</sup>	12	FP	76.75	-921	5.00	51%	-31	-29	-60	7.25	-44	-43	-87
- Pass-By Trip Reduction <sup>3</sup>				543			19	18	37		25	24	49
<i>Net Existing Trips</i>				-378			-12	-11	-23		-19	-19	-38
<b>Net Project Trips</b>				<b>-122</b>			<b>-8</b>	<b>2</b>	<b>-6</b>		<b>-6</b>	<b>-11</b>	<b>-17</b>

Notes:

Trip rates for multifamily and gas station pass-by are from the ITE Trip Generation Manual, 10th Edition, 2017.

1. Mid-Rise Multifamily Housing (Land Use 221), average rates expressed in trips per dwelling unit (DU) are used.

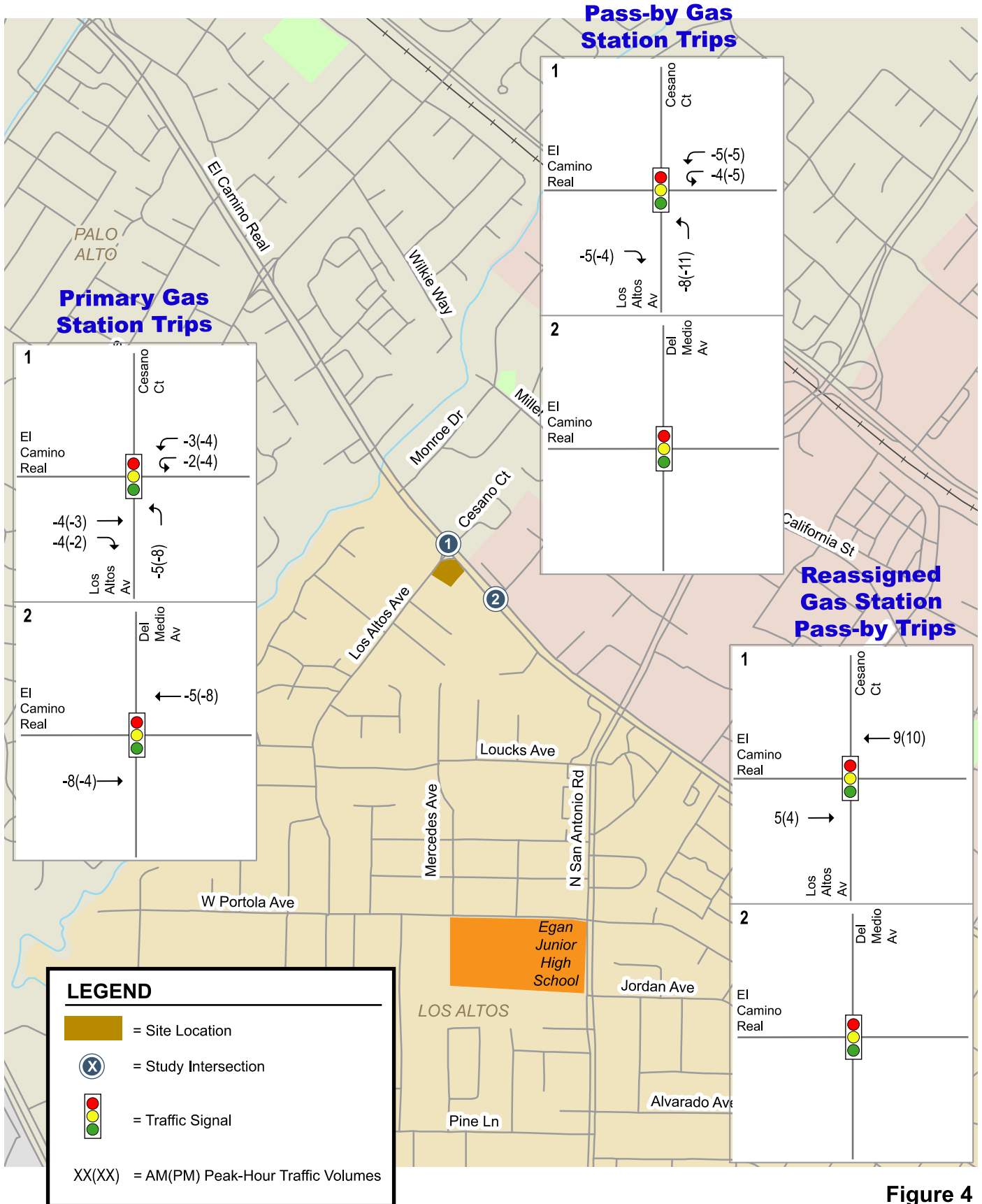
2. Existing gas station trips from driveway count 5/29/19.

3. Average pass-by trip reduction percentage of 62% in the AM peak hour and 56% in the PM peak hour is used from ITE *Trip Generation Handbook, 3<sup>rd</sup> Edition*. Daily reduction percentage is the average of AM and PM peak-hour percentage.

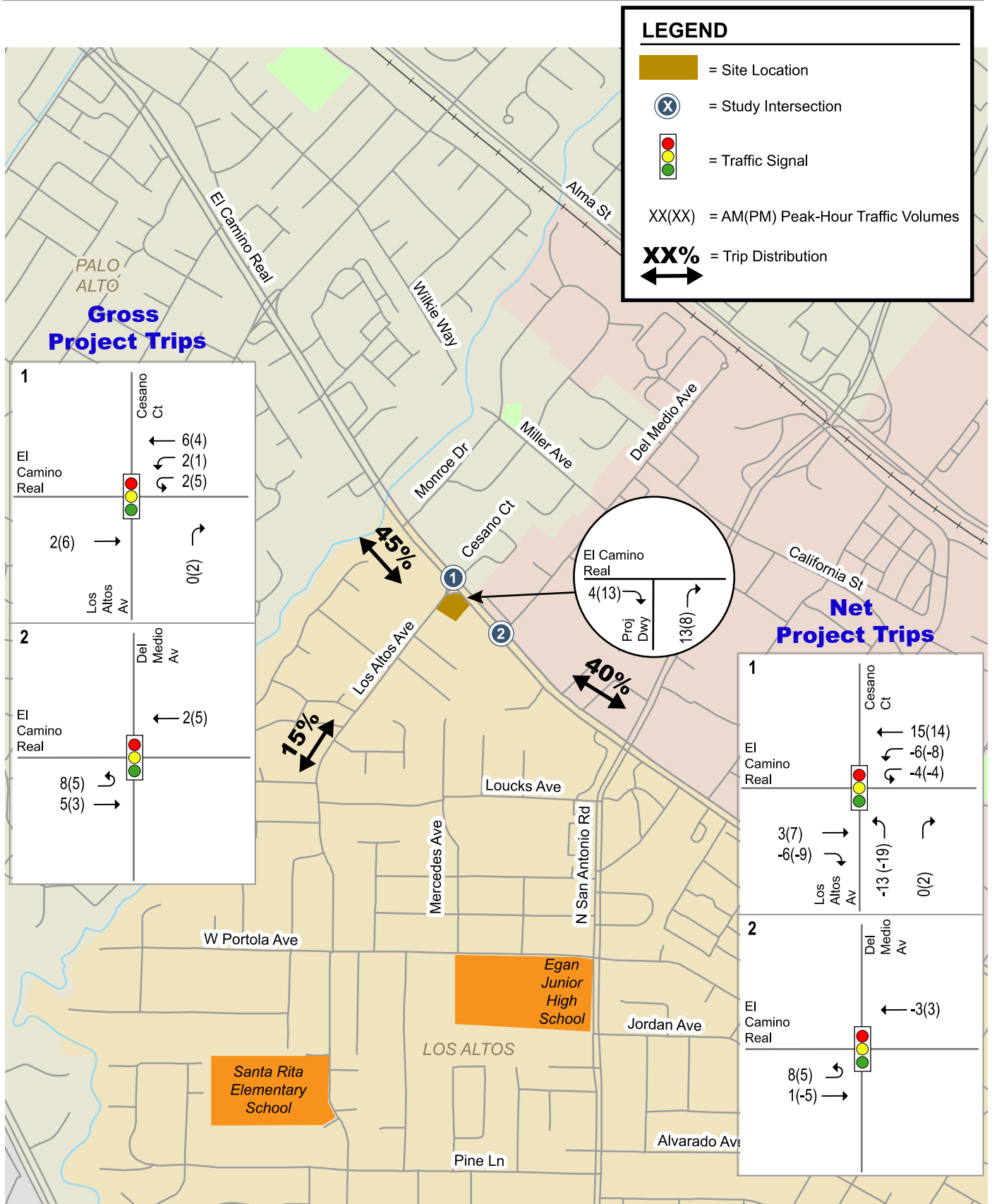
## Project Trip Distribution and Assignment

The project trips were assigned to the surrounding roadway network based on existing travel patterns in the study area and the locations of complementary land uses (see Figure 5).





**Figure 4**  
**Existing Gas Station Trips**





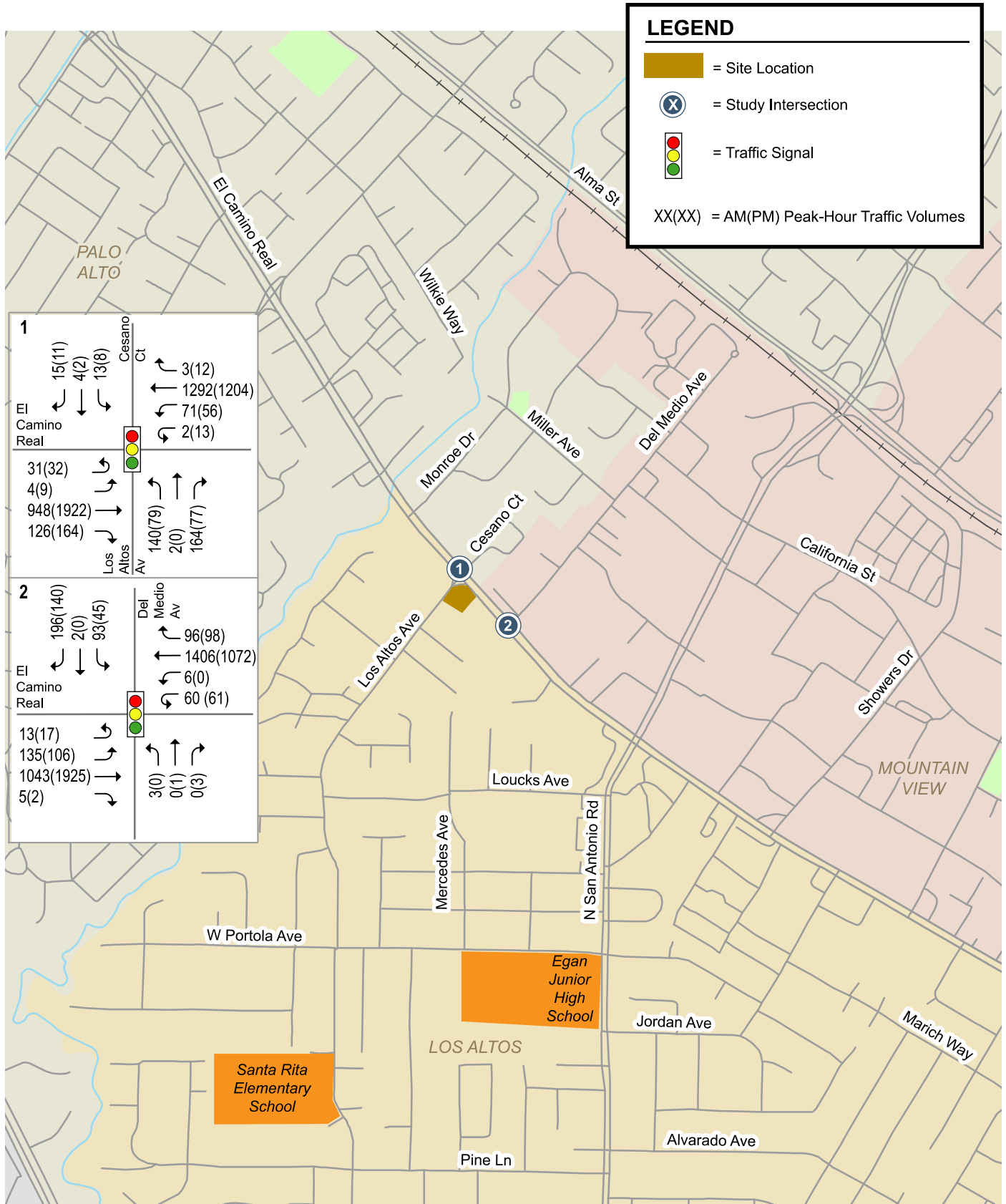
## Project Conditions Intersection Levels of Service

Project impacts were evaluated relative to both (1) existing traffic volumes and (2) near-term traffic volumes. For the existing plus project scenario, the net new trips generated by the proposed developments were added to the existing traffic volumes to derive the existing plus project traffic volumes (see Figure 6). For the near-term plus project scenario, the net new trips generated by the proposed development were added to the near-term traffic volumes to derive the near-term plus project traffic volumes (see Figure 7).

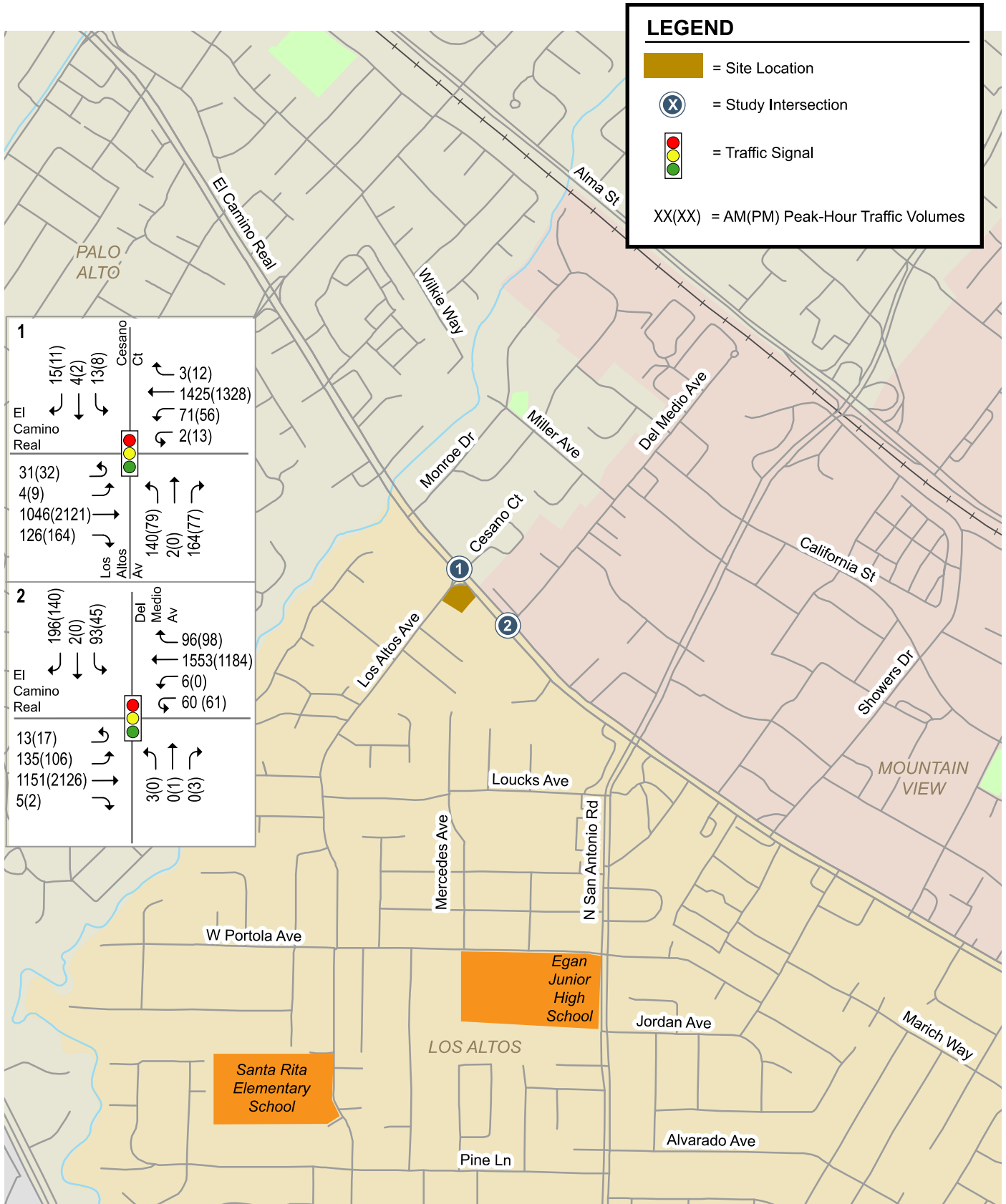
The results of the analysis indicate that the project would not create a significant impact at the study intersection under any scenarios. Table 5 summarizes the results of the peak-hour intersection level of service analysis. The intersections would operate under acceptable level of service during AM and PM peak hour under both existing plus project conditions and near-term plus project conditions. The intersection level of service calculation sheets are included in Appendix B.

**Table 5**  
**Intersection Level of Service Summary**

#	Intersection	LOS Standards	Peak Hour	Existing		Existing Plus Project				Near-Term		Near-Term Plus Project			
				Avg Delay	LOS	Avg Delay	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C	Avg Delay	LOS	Avg Delay	LOS	Incr. In Crit. Delay	Incr. In Crit. V/C
1	El Camino Real & Los Altos Ave	D	AM	21.1	C+	21.2	C+	0.1	0.011	19.9	B-	20.1	C+	0.2	0.011
			PM	13.5	B	12.0	B+	-1.5	-0.019	12.8	B	11.3	B+	-1.5	-0.019
2	El Camino Real & Del Medio Ave	D	AM	29.4	C	29.7	C	0.3	0.004	28.3	C	28.6	C	0.3	0.004
			PM	21.6	C+	21.8	C+	0.2	-0.001	20.8	C+	21.0	C+	0.2	-0.001



**Figure 6**  
Existing Plus Project Traffic Volumes



**Figure 7**  
Near-Term Plus Project Traffic Volumes



## Vehicle Queuing

The 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:

$$\text{Probability (X=n)} = \frac{\lambda^n e^{-\lambda}}{n!}$$

Where:

Probability (X=n) = probability of “n” vehicles in queue per lane

n = number of vehicles in the queue per lane

$\lambda$  = Average number of vehicles in queue per lane (vehicles per hour per lane/signal cycles per hour)

The basis of the analysis is as follows: (1) the Poisson probability distribution is used to estimate the 95th percentile maximum number of queued vehicles per signal cycle for a particular movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the movement. This analysis thus provides a basis for estimating future storage requirements at intersections.

The operations analysis is based on vehicle queuing for left turn and U-turn movements to which the project adds peak hour trips. Left turn/U-turn movements would be added to the following intersections:

- northbound left turn from Los Altos Avenue onto El Camino Real
- westbound left turn and U-turn movements from El Camino Real at Los Altos Avenue
- eastbound U-turn Movements from El Camino Real at Del Medio Avenue

The 95<sup>th</sup> percentile vehicle queue means that a queue of that distance or a shorter distance would occur 95 percent of the time. Or, a queue length longer than the 95<sup>th</sup> percentile queue would only occur 5 percent of the time. For a signal that operates with a 60 second cycle length, which equates to 60 cycles per hour, the vehicle queue would be longer than the 95<sup>th</sup> percentile during 3 of the 60 cycles. Therefore, left-turn pockets with a distance equal to the 95<sup>th</sup> percentile queue would ensure that storage space would be exceeded only 5 percent of the time. The 95th percentile queue length is also known as the “design queue length.”

### Los Altos Avenue & El Camino Real – Northbound Left and Through

The northbound approach on Los Altos Avenue has only one approach lane for through and left turn movements. The traffic signal for the northbound and southbound approaches operates with a “permitted phasing” which means that northbound and southbound traffic get the green light at the same time and traffic turning left need to yield to opposing through traffic. Therefore, for the purpose of this queuing analysis, the total approach volumes on Del Medio Avenue (left-turns and through movements) were included. The available storage of 150 feet was calculated between the crosswalk at Los Altos Avenue / El Camino Real intersection and the second driveway of the project site. Field observations showed that during the AM and PM peak hour, cars on Los Altos Avenue regularly extend beyond the project driveway and commercial building driveway (opposite



to the project site), but the queue always cleared in one signal cycle. This did not create any operational issues since the commercial building has a small parking lot with 25 stalls and very few cars enter or exit this driveway on Los Altos Avenue and less number of cars turn left into southbound Los Altos Avenue from the gas station. The proposed project eliminates the two driveways along Los Altos Avenue. This would decrease the left turning vehicles from Los Altos Avenue into El Camino Real and increase the vehicle storage length by 25 feet along the Los Altos Avenue. The queuing analysis indicates that, under project conditions, the addition of project trips would decrease the 95<sup>th</sup> percentile queue by one vehicle during the AM and PM peak hour. The queue length would be approximately 250 feet during the AM peak hour and 175 feet during the PM peak hour and would extend past the driveway of the commercial building during AM peak hours.

### **Los Altos Avenue and El Camino Real – Westbound Left turns**

There is approximately 250 feet of storage capacity for the left-turn lane on westbound El Camino Real at Los Altos Avenue, which is adequate during the AM and PM peak hours. The proposed project would generate fewer trips than the existing gas station. Therefore, the project would reduce ten trips during the AM peak hour and 12 trips during the PM peak hour in the left turn pocket. The analysis shows that, with the addition of project traffic, the 95th percentile vehicle queues would be decreased by one vehicle during the AM and PM peak hour.

### **Del Medio Avenue & El Camino Real – Eastbound Left Turns**

There is approximately 125 feet of storage capacity for the left-turn lane on eastbound El Camino Real at Del Medio Avenue, which is adequate for approximately five vehicles. Field observations did not show queues blocking the through vehicles during the AM and PM peak hour. The queuing analysis indicates that the project would not increase the maximum left-turn queue during the AM and PM peak hour compared to existing and background conditions. Since field observations showed no queuing problems during the AM and PM peak hour, and the project would not increase the queue length, the queuing impact is considered less than significant.



**Table 6  
 Intersection Level of Service Summary**

Measurement	Los Altos Avenue / El Camino Real				Del Medio Avenue / El Camino Real	
	NBLT AM	NBLT PM	WBL AM	WBL PM	EBL AM	EBL PM
<b>Existing</b>						
Cycle Length <sup>1</sup> (sec)	150	150	150	150	150	150
Volume (vphpl )	155	98	83	81	140	118
95th % . Queue (veh)	11	8	7	7	10	9
95th % . Queue (ft.)	275	200	175	175	250	225
Storage (ft./ In.)	150	150	250	250	125	125
Adequate (Y/N)	N	N	Y	Y	N	N
<b>Background</b>						
Cycle Length <sup>1</sup> (sec)	150	150	150	150	150	150
Volume (vphpl )	155	98	83	81	140	118
95th % . Queue (veh)	11	8	7	7	10	9
95th % . Queue (ft.)	275	200	175	175	250	225
Storage (ft./ In.)	150	150	250	250	125	125
Adequate (Y/N)	N	N	Y	Y	N	N
<b>Existing + Project</b>						
Cycle Length <sup>1</sup> (sec)	150	150	150	150	150	150
Volume (vphpl )	142	79	73	69	148	123
95th % . Queue (veh)	10	7	6	6	10	9
95th % . Queue (ft.)	250	175	150	150	250	225
Storage (ft./ In.) <sup>3</sup>	175	175	250	250	125	125
Adequate (Y/N)	N	Y	Y	Y	N	N
<b>Background + Project</b>						
Cycle Length <sup>1</sup> (sec)	150	150	150	150	150	150
Volume (vphpl )	142	79	73	69	148	123
95th % . Queue (veh)	10	7	6	6	10	9
95th % . Queue (ft.)	250	175	150	150	250	225
Storage (ft./ In.) <sup>3</sup>	175	175	250	250	125	125
Adequate (Y/N)	N	Y	Y	Y	N	N

<sup>1</sup> Vehicle queue calculations based on cycle length for signalized intersections.

<sup>2</sup> Assumes 25 feet per vehicle queued.

<sup>3</sup> Length of the northbound storage lane is increased due to elimination of two driveways along Los Altos Avenue with the proposed new project.





## Project Site Circulation and Access

The project's site circulation and access were evaluated in accordance with generally accepted traffic engineering standards based on project plans dated April 13, 2018. The project would provide a single two-way driveway onto El Camino Real. Parking would be provided in a two-level basement garage, as shown on Figures 8A and 8B. A description of the various design elements of the site circulation and access is provided below.

**Driveway Design.** The project proposes to use one existing driveway on El Camino Real. Thus, the project would eliminate two existing driveways on Los Altos Avenue and one existing driveway on El Camino Real. The reduction in driveways would benefit circulation in the area by reducing the number of potential conflict points and by reducing the potential delays caused by inbound vehicles. Also, the reduction in driveways would represent a safety benefit for pedestrians and bicycles.

The proposed driveway on El Camino Real is the best location for a driveway to the site because El Camino Real is a major arterial that can accommodate driveway traffic. Hexagon also considered the possibility of having a driveway to Los Altos Avenue. This driveway location would be problematic for a number of reasons. Los Altos Avenue is a residential street and having a driveway there could encourage project traffic to use it. It would be better from the standpoint of residential impact to keep the traffic on El Camino Real. Also, a driveway on Los Altos Avenue could be blocked by queues at the Los Altos Avenue/El Camino Real intersection. If it were blocked when an inbound vehicle came along, that could cause a queue spillback onto El Camino Real.

The project driveway on El Camino Real would be approximately 23.5 feet wide leading in and out of the basement parking garage. This width is adequate for a low-volume, two-way driveway, as described below. Sight distance at the project driveway would be adequate provided (1) the landscaping is kept at a low level within 10 feet of the curb face on El Camino Real and (2) sight distance is not blocked by a stopped bus. A stop sign and stop bar should be provided where the driveway intersects El Camino Real to help with the safety of pedestrians and bicycles.

**Ramp Design.** The proposed garage ramps were measured to be approximately 22 feet wide, which meets the minimum width for a two-way drive aisle set forth by the City of Los Altos Zoning Code (14.74.200). Commonly cited parking publications recommend grades of up to 16% on ramps where no parking is permitted, but grades of up to 20% are cited as acceptable when ramps are covered (i.e. protected from weather) and not used for pedestrian walkways. The garage ramp should be designed with these requirements in mind.

**Garage Design.** On each level of the parking garage, there would be four rows of parking to the west of the ramp, as well one row against the wall of the garage. On all rows, parking would be provided at 90 degrees to the main drive aisle. The drive aisles through the parking garage are shown to be 24 feet wide, which would provide sufficient room for vehicles to enter or back out of the 90-degree parking stalls. Site access and circulation were evaluated with vehicle turning movement templates for a typical AASHTO Passenger Car defined in AASHTO handbook 2011. Some examples of this type of vehicles are: 2018 Cadillac Escalade, 2018 GMC Yukon, 2018 Chevrolet Suburban, 2018 Ford Expedition, and 2018 Toyota Sequoia. The turning template check shows that passenger



vehicles (18 feet in length) would be able to access, circulate, and exit the garage (see Figure 8A and 8B).

The parking area has dead-end aisles, but all parking in the garage will be assigned. Therefore, residents will not have to worry about making a multi-point turn to find another parking space as the parking space will always be available.

The site plan shows that the parking spaces are 9 feet wide by 18 feet long, which meets the LAMC requirements. Per the California Building Code (Section 1109A8.5), accessible parking spaces are required to be 9 feet wide by 18 feet long with adjacent 5-foot wide loading/unloading spaces. The project site plan shows that that the accessible parking spaces meet this requirement.



Figure 8A  
Upper Level Garage Turning Template

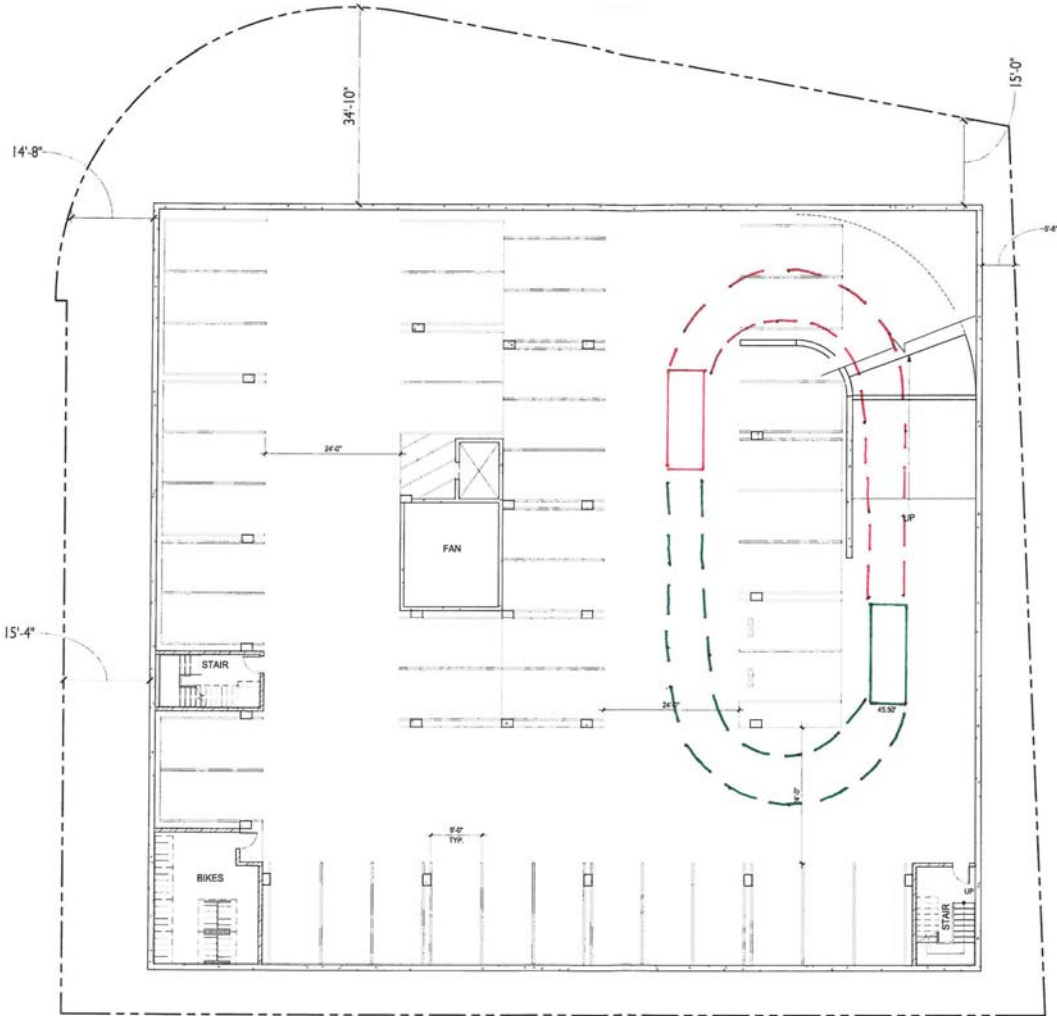


Figure 8B  
Lower Level Garage Turning Template



**Truck Access.** A 20' x 27' enclosed loading/staging (trash) area is shown adjacent to the garage driveway. Garbage bins would be wheeled from their respective trash rooms to the ground floor trash area. Garbage trucks would park on El Camino Real near the project driveway and wheel the garbage bins from the trash room to the truck and then return them.

**Bike Parking.** The Valley Transportation Authority (VTA) provides guidelines for bike parking in its publication *Bike Technical Guidelines*. Class I spaces are defined as spaces that protect the entire bike and its components from theft, such as in a secure designated room or a bike locker. Class II spaces provide an opportunity to secure at least one wheel and the frame using a lock, such as bike racks. For multi-family dwelling units, VTA recommends one Class I space per three dwelling units and one Class II space per 15 dwelling units. For the proposed project, this would equate to 16 Class I spaces and 4 Class II spaces. The project site plan shows 30 Class I spaces in the lower level of the garage and 4 Class II spaces located next to the lobby of the building. The project meets the VTA bicycle parking space requirements.

**Pedestrian Access.** The project would provide a paved walkway between the existing sidewalk on El Camino Real and the building entrance. There is an existing bus stop adjacent to the proposed project driveway on El Camino Real. The bus stop makes it convenient for residents and guests to utilize the bus services on El Camino Real.

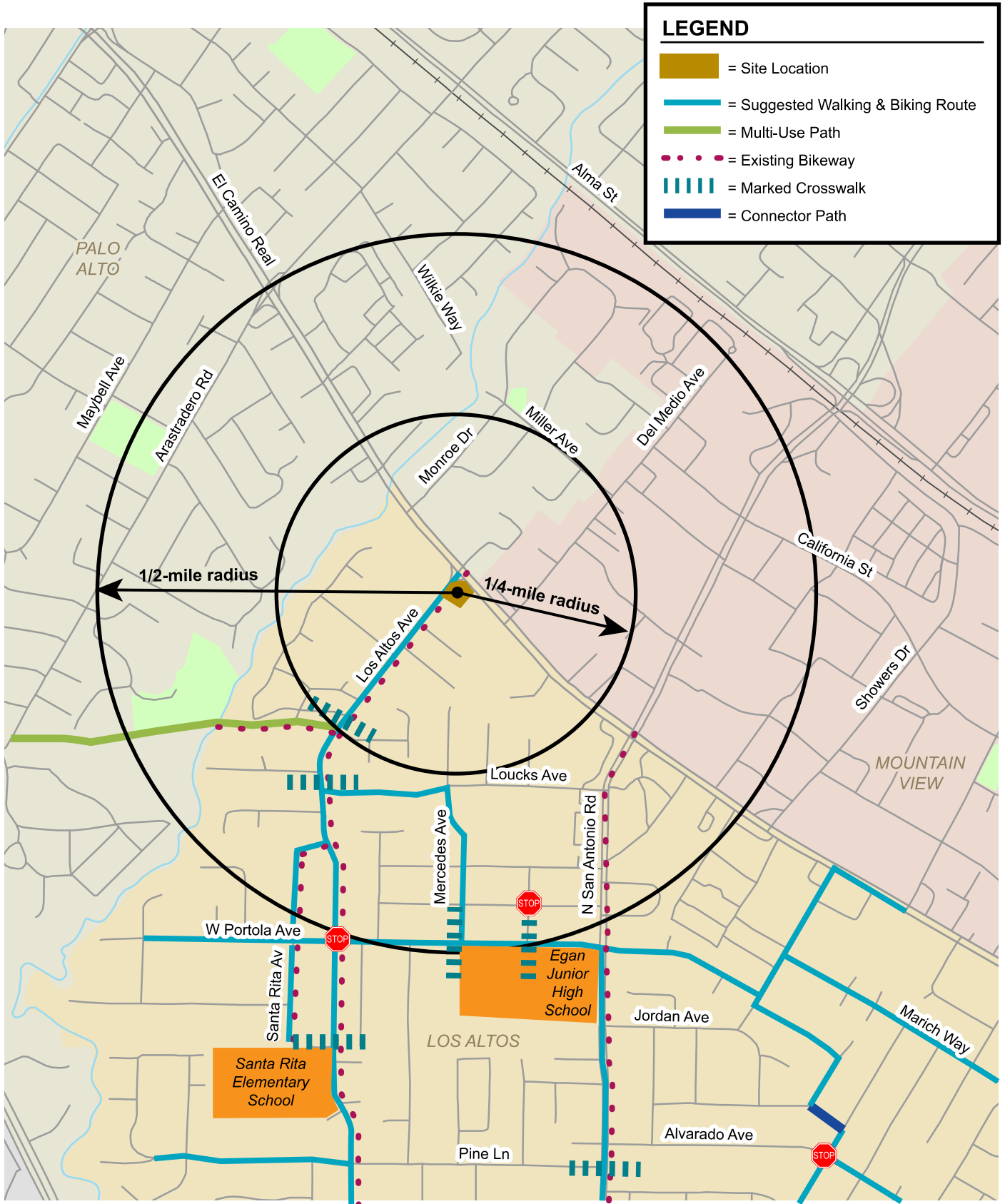
Generally, the design of the project site circulation and access is consistent with urban design practices. The presence of the garage ramp, short onsite drive aisles, and “confined” feel of the parking garage would serve to keep vehicles operating at very low speeds. In addition, the low traffic volume onsite means that the frequency of vehicle conflicts would be relatively low.

## Off-Site Improvements

El Camino Real and Los Altos Avenue could be reconfigured in the future to remove the existing pork-chop island and free right turns. The reconfiguration would improve pedestrian safety. The project would remove two driveways on Los Altos Avenue, which would reduce the number of right turns and facilitate the removal of the free right movement. The project is compatible with the potential reconfiguration.

## School Connections

The proposed residential development would serve a number of public schools in the area, including Santa Rita Elementary School, Egan Junior High School, Los Altos High School, and Almond Elementary School. Santa Rita Elementary School and Egan Junior High School are the only schools within a 1-mile radius. The City of Los Altos created Suggested Routes to Schools Maps for ½-mile and 1-mile walking radii. Suggested walking and biking routes are along Los Altos Avenue from El Camino Real to Edith Avenue, San Antonio Road from Portola Avenue to Foothill Expressway, Locus Avenue, Mercedes Avenue, Portola Avenue, Pine Lane west of Los Altos Avenue, Loucks Avenue, and Santa Rita Avenue (see Figure 9).



**Figure 9**  
Suggested Routes to School



## Conclusions

The proposed residential project with 47 total dwelling units would generate less traffic than the gas station it would replace. It would not result in any significant impacts to the study intersections during the AM and PM peak hours under both existing plus project and near-term plus project conditions. The proposed reduction in driveways from four to one would benefit local circulation and safety. The proposed driveway on El Camino Real is the best possible driveway location because El Camino Real is better able to accommodate traffic than Los Altos Avenue, which is a residential street.

Garage ramps should be a maximum of 16%, unless ramps are covered and not used for pedestrian walkways, in which a grade up to 20% is acceptable. The garage has sufficient room for vehicles with move through the main drive aisles, as well as in and out of the parking stalls. Pedestrians would have good access to the project site with the proposed walkway between the existing sidewalk on El Camino Real and the building entrance. The existing bus stop in along the project frontage also helps pedestrians travel to further locations.

There are two schools within a 1-mile walking distance to the proposed project. The City of Los Altos suggests safe walking routes between the schools and the proposed residential development.

It is recommended to install a STOP sign and stop bar at the garage exit to advise motorists to STOP before exiting the driveway. We appreciate the opportunity to submit this trip generation analysis. If you have any questions, please do not hesitate to call.

Sincerely,

**HEXAGON TRANSPORTATION CONSULTANTS, INC.**

Gary K. Black  
President



## **Appendix A**

### **Traffic Counts**





(303) 216-2439  
www.alltrafficdata.net

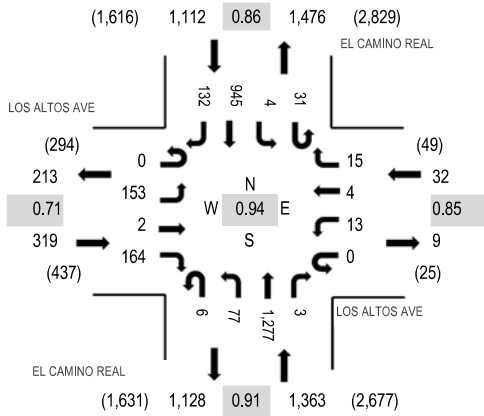
Location: 1 EL CAMINO REAL & LOS ALTOS AVE AM

Date: Wednesday, May 29, 2019

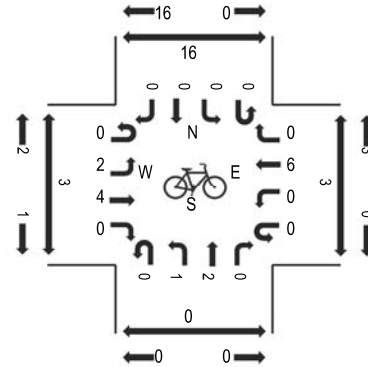
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:15 AM - 08:30 AM

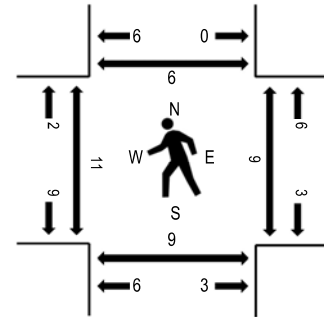
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	LOS ALTOS AVE Eastbound				LOS ALTOS AVE Westbound				EL CAMINO REAL Northbound				EL CAMINO REAL 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	9	0	9	0	2	0	0	5	4	225	5	6	0	74	10	349	1,953	1	6	0	3
7:15 AM	0	11	0	8	0	1	0	2	1	7	297	4	11	0	83	10	435	2,237	0	1	2	0
7:30 AM	0	18	0	10	0	1	0	3	2	10	383	4	7	1	134	10	583	2,553	3	4	1	4
7:45 AM	0	26	0	27	0	5	0	3	2	16	347	2	5	0	139	14	586	2,717	4	4	2	0
8:00 AM	0	24	0	28	0	5	0	2	0	16	320	2	13	1	189	33	633	2,826	3	3	2	5
8:15 AM	0	27	0	39	0	3	2	4	1	43	309	1	4	1	271	46	751		2	4	2	0
8:30 AM	0	57	2	54	0	2	2	6	3	10	330	0	9	1	248	23	747		3	1	2	0
8:45 AM	0	45	0	43	0	3	0	3	2	8	318	0	5	1	237	30	695		3	1	3	1

### Peak Rolling Hour Flow Rates

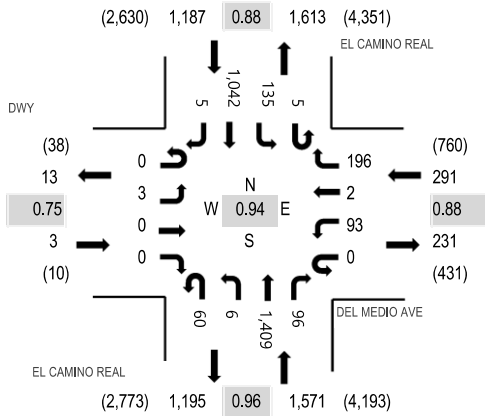
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	1	0	0	0	0	0	1	8	0	0	0	6	0	16
Lights	0	153	2	160	0	13	4	12	6	74	1,237	3	30	1	909	131	2,735
Mediums	0	0	0	3	0	0	0	3	0	2	32	0	1	3	30	1	75
Total	0	153	2	164	0	13	4	15	6	77	1,277	3	31	4	945	132	2,826



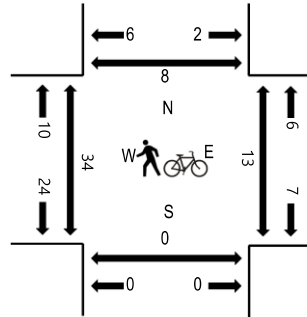
(303) 216-2439  
www.alltrafficdata.net

**Location:** 1 EL CAMINO REAL & DEL MEDIO AVE AM  
**Date and Start Time:** Wednesday, November 15, 2017  
**Peak Hour:** 08:15 AM - 09:15 AM  
**Peak 15-Minutes:** 08:15 AM - 08:30 AM

**Peak Hour - All Vehicles**



**Peak Hour - Pedestrians/Bicycles in Crosswalk**



Note: Total study counts contained in parentheses.

**Traffic Counts**

Interval Start Time	DWY Eastbound				DEL MEDIO AVE Westbound				EL CAMINO REAL Northbound				EL CAMINO REAL 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	0	0	0	11	0	27	6	1	204	9	1	6	90	0	355	2,062	2	6	0	1
7:15 AM	0	0	0	0	0	11	0	33	9	2	301	7	1	14	110	0	488	2,396	5	2	0	2
7:30 AM	0	0	0	1	0	21	0	34	10	1	352	12	0	7	152	0	590	2,716	2	1	0	0
7:45 AM	0	0	0	1	0	19	0	58	25	3	343	13	2	14	150	1	629	2,916	3	1	0	0
8:00 AM	0	0	0	0	0	26	0	76	7	5	334	11	0	11	219	0	689	3,039	2	4	0	0
8:15 AM	0	0	0	0	0	26	0	69	10	0	358	19	0	31	293	2	808	3,052	6	4	0	1
8:30 AM	0	0	0	0	0	29	0	57	17	0	324	26	1	54	282	0	790	2,839	7	0	0	1
8:45 AM	0	2	0	0	0	23	1	45	18	1	356	34	1	33	236	2	752	2,663	7	4	0	2
9:00 AM	0	1	0	0	0	15	1	25	15	5	371	17	3	17	231	1	702	2,492	6	3	0	0
9:15 AM	0	1	0	1	0	17	0	39	12	1	281	19	2	19	201	2	595		2	1	0	0
9:30 AM	0	0	0	1	0	10	3	37	20	0	293	13	1	11	222	3	614		4	0	0	0
9:45 AM	0	0	0	2	0	15	1	31	21	2	286	19	1	15	188	0	581		3	1	0	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	5	0	0	0	6	0	11
Lights	0	3	0	0	0	92	2	194	59	6	1,375	93	5	133	1,004	5	2,971
Mediums	0	0	0	0	0	1	0	2	1	0	29	3	0	2	32	0	70
<b>Total</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>93</b>	<b>2</b>	<b>196</b>	<b>60</b>	<b>6</b>	<b>1,409</b>	<b>96</b>	<b>5</b>	<b>135</b>	<b>1,042</b>	<b>5</b>	<b>3,052</b>



(303) 216-2439  
www.alltrafficdata.net

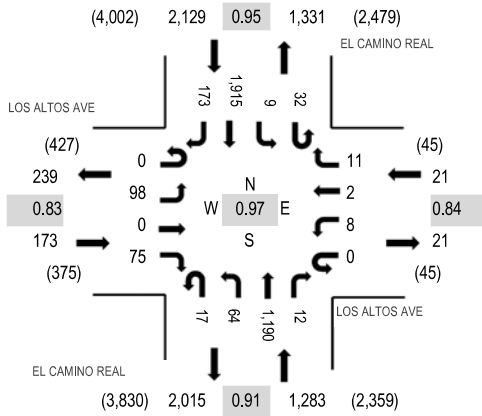
Location: 1 EL CAMINO REAL & LOS ALTOS AVE PM

Date: Wednesday, May 29, 2019

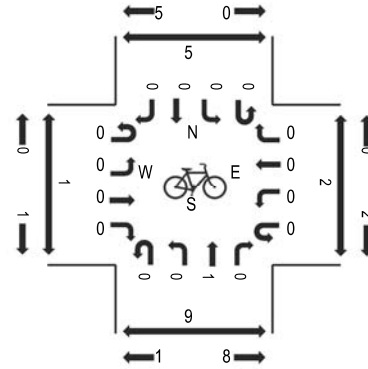
Peak Hour: 05:00 PM - 06:00 PM

Peak 15-Minutes: 05:45 PM - 06:00 PM

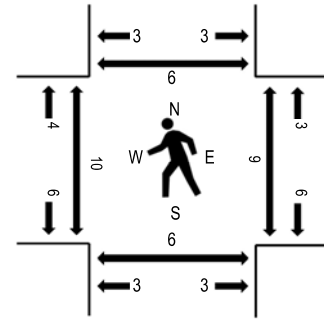
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	LOS ALTOS AVE Eastbound				LOS ALTOS AVE Westbound				EL CAMINO REAL Northbound				EL CAMINO REAL 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	33	0	28	0	1	0	5	1	14	224	1	7	2	380	24	720	3,175	1	0	0	0
4:15 PM	0	24	2	19	0	2	1	0	1	11	253	0	5	5	419	38	780	3,336	2	4	0	1
4:30 PM	0	30	0	15	0	4	0	4	4	14	280	6	2	3	480	32	874	3,460	4	6	1	2
4:45 PM	0	28	0	23	0	1	1	5	3	17	244	3	4	2	434	36	801	3,480	4	6	0	1
5:00 PM	0	21	0	18	0	2	0	3	4	9	287	1	6	2	491	37	881	3,606	3	3	3	1
5:15 PM	0	30	0	15	0	2	0	5	2	22	323	4	6	3	454	38	904		3	1	2	2
5:30 PM	0	18	0	24	0	0	1	3	5	16	293	4	8	3	470	49	894		3	1	0	1
5:45 PM	0	29	0	18	0	4	1	0	6	17	287	3	12	1	500	49	927		1	4	1	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	98	0	74	0	8	2	11	17	64	1,166	12	32	9	1,900	171	3,564
Mediums	0	0	0	1	0	0	0	0	0	0	24	0	0	0	15	2	42
Total	0	98	0	75	0	8	2	11	17	64	1,190	12	32	9	1,915	173	3,606



**Location:** 2 EL CAMINO REAL & DEL MEDIO AVE PM

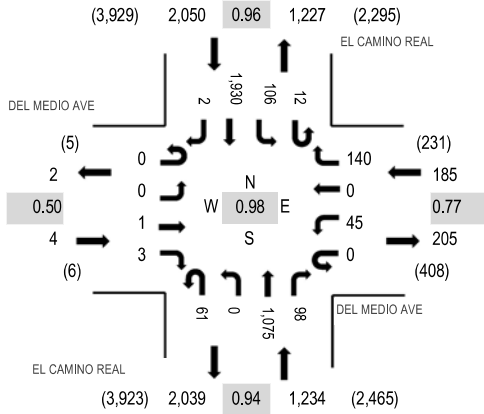
**Date:** Wednesday, May 29, 2019

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

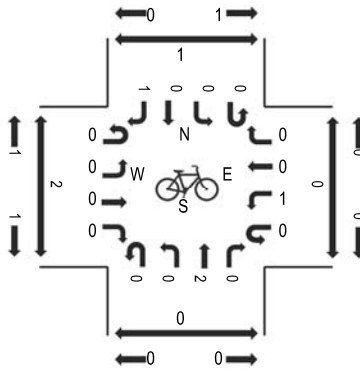
**Peak 15-Minutes:** 05:45 PM - 06:00 PM

(303) 216-2439  
www.alltrafficdata.net

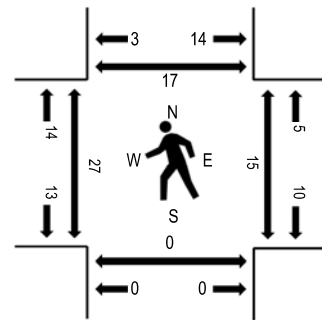
**Peak Hour - Motorized Vehicles**



**Peak Hour - Bicycles**



**Peak Hour - Pedestrians**



Note: Total study counts contained in parentheses.

**Traffic Counts - Motorized Vehicles**

Interval Start Time	DEL MEDIO AVE Eastbound				DEL MEDIO AVE Westbound				EL CAMINO REAL Northbound				EL CAMINO REAL 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	0	0	0	20	0	237	27	1	26	402	0	713	3,158	6	5	0	2
4:15 PM	0	0	0	0	0	0	0	0	24	1	263	33	2	26	423	0	772	3,316	8	10	0	8
4:30 PM	0	1	0	0	0	1	0	10	16	1	290	31	1	10	486	0	847	3,410	10	6	0	7
4:45 PM	0	0	0	1	0	13	0	22	24	0	241	23	0	27	474	1	826	3,409	8	2	0	3
5:00 PM	0	0	0	0	0	10	0	26	15	0	270	25	2	33	490	0	871	3,473	10	6	0	8
5:15 PM	0	0	0	0	0	15	0	45	12	0	299	19	3	19	454	0	866		2	3	0	1
5:30 PM	0	0	1	1	0	5	0	31	11	0	263	21	4	38	470	1	846		8	4	0	3
5:45 PM	0	0	0	2	0	15	0	38	23	0	243	33	3	16	516	1	890		7	2	0	5

**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	3	0	0	0	0	0	3
Lights	0	0	1	3	0	45	0	138	61	0	1,052	97	12	104	1,911	2	3,426
Mediums	0	0	0	0	0	0	0	2	0	0	20	1	0	2	19	0	44
Total	0	0	1	3	0	45	0	140	61	0	1,075	98	12	106	1,930	2	3,473



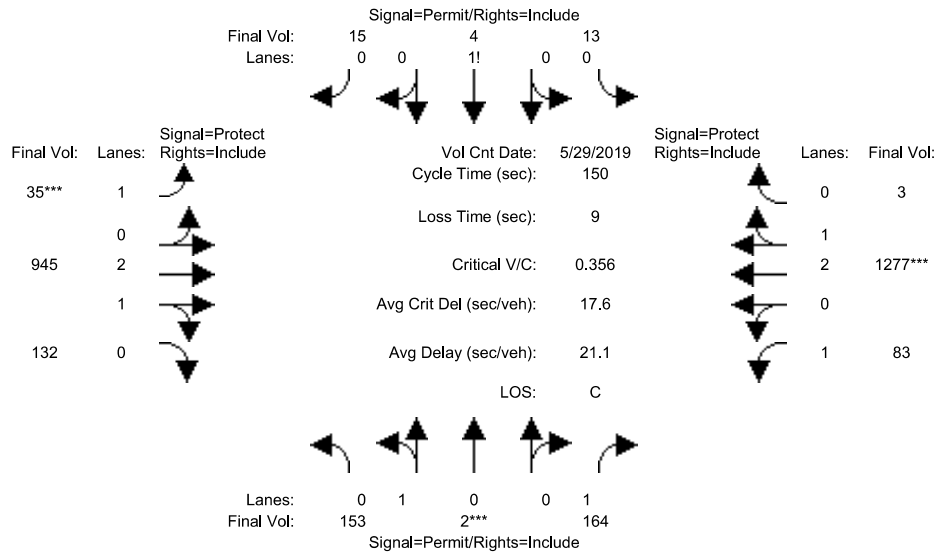
## **Apendix B**

### **Level of Service Calculations**

4350 EL Camino Real

Level Of Service Computation Report  
2000 HCM Operations (Future Volume Alternative)  
Existing AM

Intersection #1: Los Altos Avenue / El Camino Real



Street Name: Los Altos Avenue El Camino Real  
 Approach: North Bound South Bound East Bound West Bound  
 Movement: L - T - R L - T - R L - T - R L - T - R

Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module: >> Count Date: 29 May 2019 << 8:00 AM - 9:00 AM												
Base Vol:	153	2	164	13	4	15	35	945	132	83	1277	3
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:	153	2	164	13	4	15	35	945	132	83	1277	3
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:	153	2	164	13	4	15	35	945	132	83	1277	3
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:	153	2	164	13	4	15	35	945	132	83	1277	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	153	2	164	13	4	15	35	945	132	83	1277	3
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
Final Volume:	153	2	164	13	4	15	35	945	132	83	1277	3

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	0.99	0.01	1.00	0.41	0.12	0.47	1.00	2.62	0.38	1.00	2.99	0.01
Final Sat.:	1777	23	1750	711	219	820	1750	4913	686	1750	5587	13

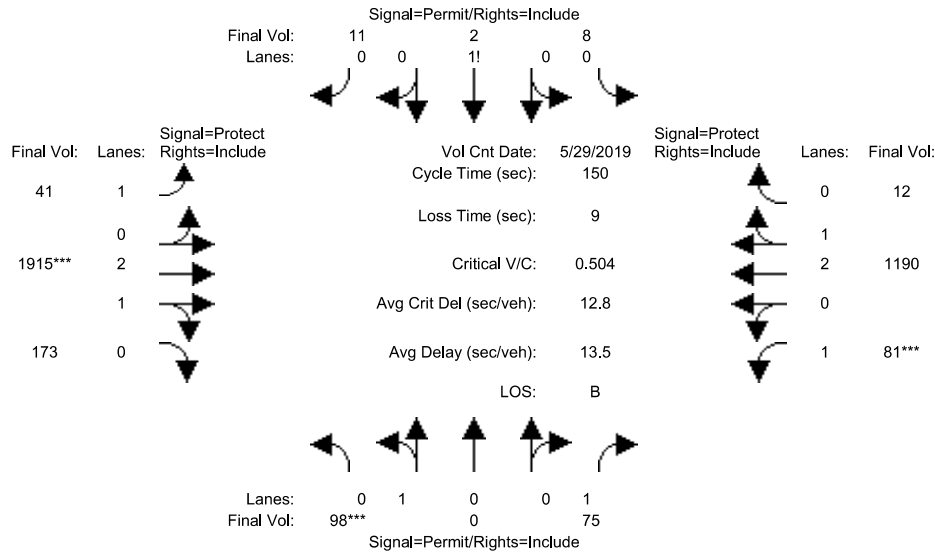
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.02	0.02	0.02	0.02	0.19	0.19	0.05	0.23	0.23
Crit Moves:	****						****			****		
Green Time:	36.3	36.3	36.3	36.3	36.3	36.3	8.4	84.0	84.0	20.7	96.3	96.3
Volume/Cap:	0.36	0.36	0.39	0.08	0.08	0.08	0.36	0.34	0.34	0.34	0.36	0.36
Delay/Veh:	47.7	47.7	48.2	44.0	44.0	44.0	70.4	18.0	18.0	59.3	12.5	12.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.7	47.7	48.2	44.0	44.0	44.0	70.4	18.0	18.0	59.3	12.5	12.5
LOS by Move:	D	D	D	D	D	D	E	B	B	E	B	B
HCM2kAvgQ:	6	6	7	1	1	1	2	9	9	4	9	9

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

4350 EL Camino Real

Level Of Service Computation Report  
2000 HCM Operations (Future Volume Alternative)  
Existing PM

Intersection #1: Los Altos Avenue / El Camino Real



Street Name:	Los Altos Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:	>>	Count	Date:	29 May 2019	<<	5:00 PM to 6:00 PM						
Base Vol:	98	0	75	8	2	11	41	1915	173	81	1190	12
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:	98	0	75	8	2	11	41	1915	173	81	1190	12
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:	98	0	75	8	2	11	41	1915	173	81	1190	12
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:	98	0	75	8	2	11	41	1915	173	81	1190	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	0	75	8	2	11	41	1915	173	81	1190	12
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
Final Volume:	98	0	75	8	2	11	41	1915	173	81	1190	12

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	1.00	0.00	1.00	0.38	0.10	0.52	1.00	2.74	0.26	1.00	2.97	0.03
Final Sat.:	1800	0	1750	667	167	917	1750	5135	464	1750	5544	56

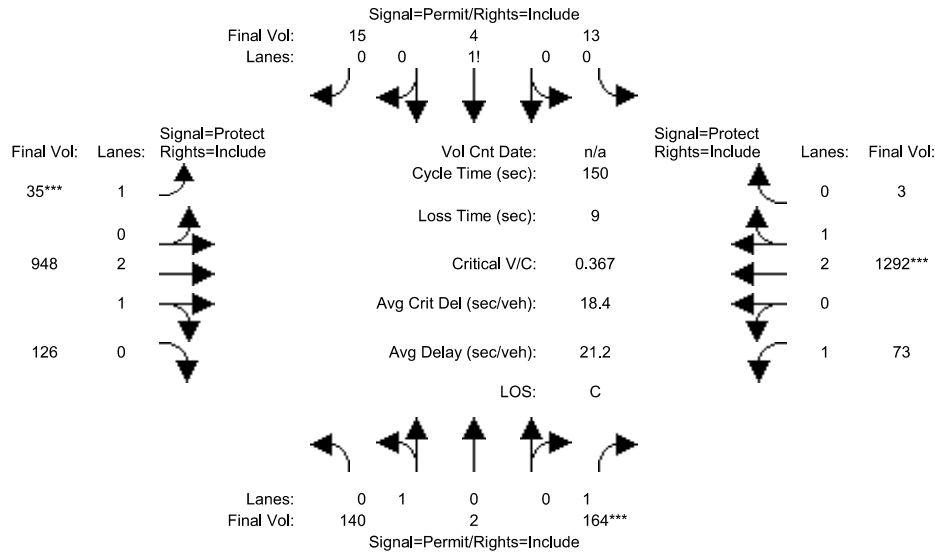
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.04	0.01	0.01	0.01	0.02	0.37	0.37	0.05	0.21	0.21
Crit Moves:	***							***		***		
Green Time:	16.2	0.0	16.2	16.2	16.2	16.2	22.3	111	111.0	13.8	103	102.5
Volume/Cap:	0.50	0.00	0.40	0.11	0.11	0.11	0.16	0.50	0.50	0.50	0.31	0.31
Delay/Veh:	65.2	0.0	63.7	60.7	60.7	60.7	56.0	8.2	8.2	67.4	9.6	9.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.2	0.0	63.7	60.7	60.7	60.7	56.0	8.2	8.2	67.4	9.6	9.6
LOS by Move:	E	A	E	E	E	E	E	A	A	E	A	A
HCM2kAvgQ:	5	0	4	1	1	1	2	13	13	4	7	7

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

4350 EL Camino Real

Level Of Service Computation Report  
2000 HCM Operations (Future Volume Alternative)  
Existing+Project AM

Intersection #1: Los Altos Avenue / El Camino Real



Street Name:	Los Altos Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	140	2	164	13	4	15	35	948	126	73	1292	3
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:	140	2	164	13	4	15	35	948	126	73	1292	3
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:	140	2	164	13	4	15	35	948	126	73	1292	3
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:	140	2	164	13	4	15	35	948	126	73	1292	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	140	2	164	13	4	15	35	948	126	73	1292	3
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
Final Volume:	140	2	164	13	4	15	35	948	126	73	1292	3

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	0.99	0.01	1.00	0.41	0.12	0.47	1.00	2.64	0.36	1.00	2.99	0.01
Final Sat.:	1775	25	1750	711	219	820	1750	4942	657	1750	5587	13

Capacity Analysis Module:

Vol/Sat:	0.08	0.08	0.09	0.02	0.02	0.02	0.02	0.19	0.19	0.04	0.23	0.23
Crit Moves:	****			****			****			****		
Green Time:	38.3	38.3	38.3	38.3	38.3	38.3	8.2	82.6	82.6	20.1	94.5	94.5
Volume/Cap:	0.31	0.31	0.37	0.07	0.07	0.07	0.37	0.35	0.35	0.31	0.37	0.37
Delay/Veh:	45.5	45.5	46.4	42.4	42.4	42.4	70.8	18.8	18.8	59.5	13.4	13.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.5	45.5	46.4	42.4	42.4	42.4	70.8	18.8	18.8	59.5	13.4	13.4
LOS by Move:	D	D	D	D	D	D	E	B	B	E	B	B
HCM2kAvgQ:	5	5	7	1	1	1	2	9	9	3	9	9

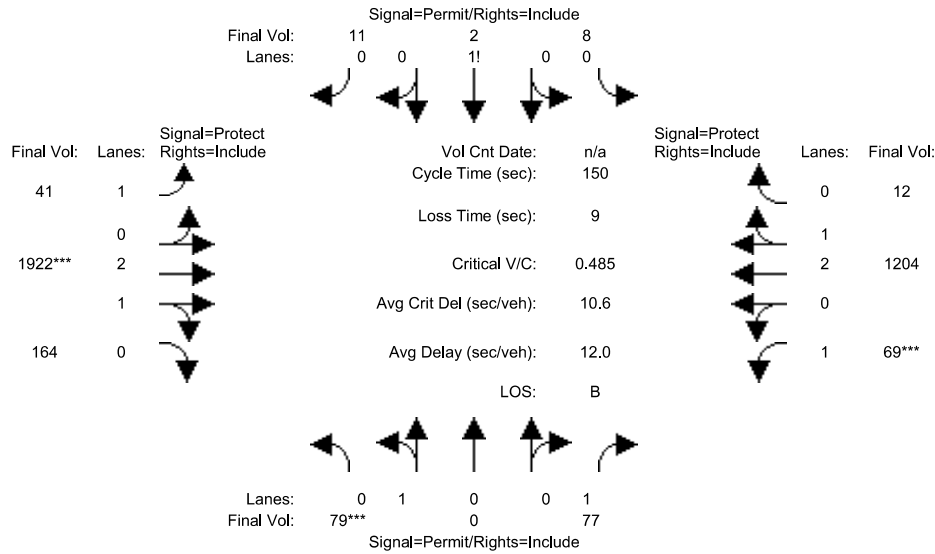
Note: Queue reported is the number of cars per lane.



4350 EL Camino Real

Level Of Service Computation Report  
2000 HCM Operations (Future Volume Alternative)  
Existing+Project PM

Intersection #1: Los Altos Avenue / El Camino Real



Street Name:	Los Altos Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	79	0	77	8	2	11	41	1922	164	69	1204	12
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:	79	0	77	8	2	11	41	1922	164	69	1204	12
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:	79	0	77	8	2	11	41	1922	164	69	1204	12
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:	79	0	77	8	2	11	41	1922	164	69	1204	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	79	0	77	8	2	11	41	1922	164	69	1204	12
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
Final Volume:	79	0	77	8	2	11	41	1922	164	69	1204	12

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	1.00	0.00	1.00	0.38	0.10	0.52	1.00	2.76	0.24	1.00	2.97	0.03
Final Sat.:	1800	0	1750	667	167	917	1750	5159	440	1750	5545	55

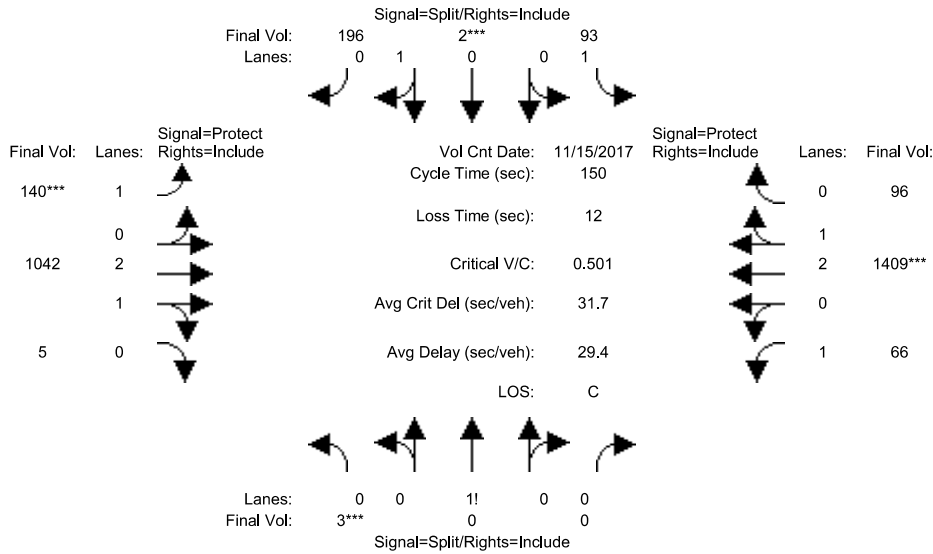
Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.04	0.00	0.04	0.01	0.01	0.01	0.02	0.37	0.37	0.04	0.22	0.22
Crit Moves:	****						****			****		
Green Time:	13.6	0.0	13.6	13.6	13.6	13.6	22.5	115	115.2	12.2	105	104.9
Volume/Cap:	0.48	0.00	0.49	0.13	0.13	0.13	0.16	0.48	0.48	0.48	0.31	0.31
Delay/Veh:	67.2	0.0	67.2	63.2	63.2	63.2	55.7	6.5	6.5	68.5	8.7	8.7
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:	67.2	0.0	67.2	63.2	63.2	63.2	55.7	6.5	6.5	68.5	8.7	8.7
LOS by Move:	E	A	E	E	E	E	E	A	A	E	A	A
HCM2kAvgQ:	4	0	4	1	1	1	2	12	12	4	7	7

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

4350 EL Camino Real

Level Of Service Computation Report  
2000 HCM Operations (Future Volume Alternative)  
Existing AM

Intersection #2: Del Medio Avenue/El Camino Real



Street Name:	Del Medio Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:	>>	Count	Date:	15 Nov 2017	<<	8:15 AM - 9:15 AM						
Base Vol:	3	0	0	93	2	196	140	1042	5	66	1409	96
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:	3	0	0	93	2	196	140	1042	5	66	1409	96
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:	3	0	0	93	2	196	140	1042	5	66	1409	96
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:	3	0	0	93	2	196	140	1042	5	66	1409	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	0	0	93	2	196	140	1042	5	66	1409	96
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
Final Volume:	3	0	0	93	2	196	140	1042	5	66	1409	96

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	0.00	0.00	1.00	0.01	0.99	1.00	2.99	0.01	1.00	2.80	0.20
Final Sat.:	1750	0	0	1750	18	1782	1750	5573	27	1750	5242	357

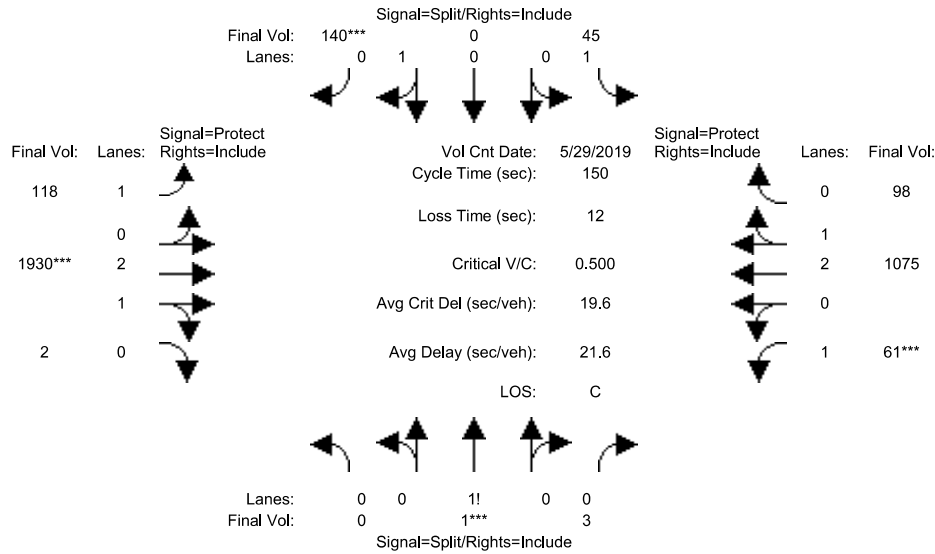
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.05	0.11	0.11	0.08	0.19	0.19	0.04	0.27	0.27
Crit Moves:	***			***			***			***		
Green Time:	10.0	0.0	0.0	30.7	30.7	30.7	22.3	77.9	77.9	19.4	75.0	75.0
Volume/Cap:	0.03	0.00	0.00	0.26	0.54	0.54	0.54	0.36	0.36	0.29	0.54	0.54
Delay/Veh:	65.5	0.0	0.0	50.5	54.9	54.9	61.3	21.4	21.4	59.8	25.9	25.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.5	0.0	0.0	50.5	54.9	54.9	61.3	21.4	21.4	59.8	25.9	25.9
LOS by Move:	E	A	A	D	D	D	E	C	C	E	C	C
HCM2kAvgQ:	0	0	0	4	9	9	7	9	9	3	16	16

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

4350 EL Camino Real

Level Of Service Computation Report  
2000 HCM Operations (Future Volume Alternative)  
Existing PM

Intersection #2: Del Medio Avenue/El Camino Real



Street Name:	Del Medio Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:	>>	Count	Date:	29 May 2019	<<	5:00 PM	-6:00 PM					
Base Vol:	0	1	3	45	0	140	118	1930	2	61	1075	98
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1	3	45	0	140	118	1930	2	61	1075	98
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1	3	45	0	140	118	1930	2	61	1075	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1	3	45	0	140	118	1930	2	61	1075	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1	3	45	0	140	118	1930	2	61	1075	98
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
Final Volume:	0	1	3	45	0	140	118	1930	2	61	1075	98

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.92	1.00	0.95	0.92	0.98	0.95	0.92	0.99	0.95
Lanes:	0.00	0.25	0.75	1.00	0.00	1.00	1.00	2.99	0.01	1.00	2.74	0.26
Final Sat.:	0	450	1350	1750	0	1800	1750	5594	6	1750	5132	468

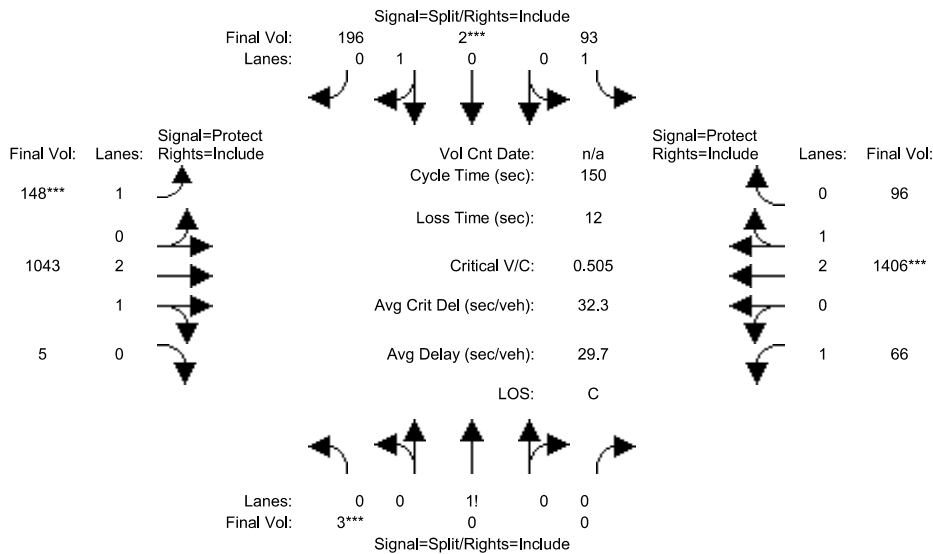
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.03	0.00	0.08	0.07	0.35	0.35	0.03	0.21	0.21
Crit Moves:	****			****			****			****		
Green Time:	0.0	10.0	10.0	21.8	0.0	21.8	25.9	96.5	96.5	9.7	80.4	80.4
Volume/Cap:	0.00	0.03	0.03	0.18	0.00	0.54	0.39	0.54	0.54	0.54	0.39	0.39
Delay/Veh:	0.0	65.6	65.6	56.6	0.0	61.6	55.9	14.7	14.7	72.9	20.5	20.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	65.6	65.6	56.6	0.0	61.6	55.9	14.7	14.7	72.9	20.5	20.5
LOS by Move:	A	E	E	E	A	E	E	B	B	E	C	C
HCM2kAvgQ:	0	0	0	2	0	7	5	16	16	4	10	10

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

4350 EL Camino Real

Level Of Service Computation Report  
2000 HCM Operations (Future Volume Alternative)  
Existing+Project AM

Intersection #2: Del Medio Avenue/El Camino Real



Street Name:	Del Medio Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	3	0	0	93	2	196	148	1043	5	66	1406	96
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:	3	0	0	93	2	196	148	1043	5	66	1406	96
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:	3	0	0	93	2	196	148	1043	5	66	1406	96
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:	3	0	0	93	2	196	148	1043	5	66	1406	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	0	0	93	2	196	148	1043	5	66	1406	96
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
Final Volume:	3	0	0	93	2	196	148	1043	5	66	1406	96

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	0.00	0.00	1.00	0.01	0.99	1.00	2.99	0.01	1.00	2.80	0.20
Final Sat.:	1750	0	0	1750	18	1782	1750	5573	27	1750	5242	358

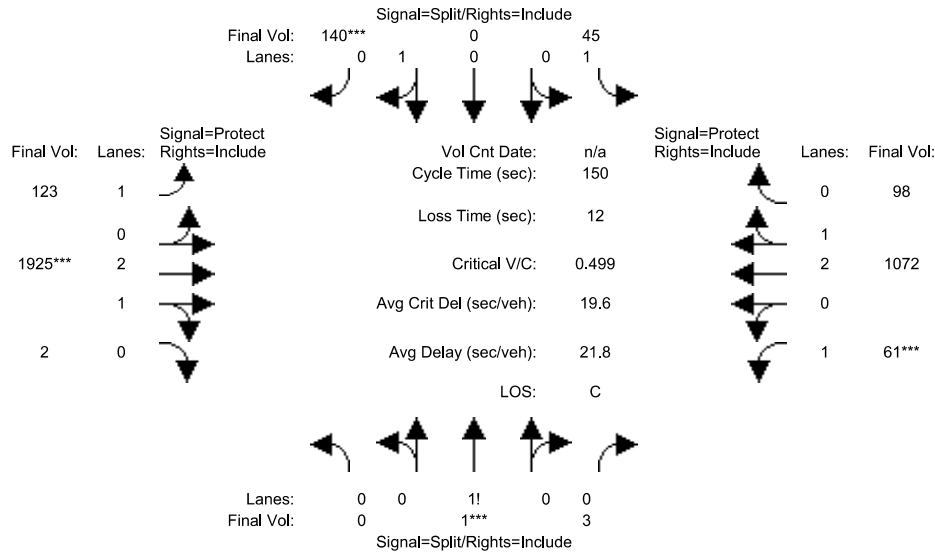
Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.00	0.00	0.00	0.05	0.11	0.11	0.08	0.19	0.19	0.04	0.27	0.27
Crit Moves:	***			****			****			****		
Green Time:	10.0	0.0	0.0	30.4	30.4	30.4	23.4	78.1	78.1	19.5	74.2	74.2
Volume/Cap:	0.03	0.00	0.00	0.26	0.54	0.54	0.54	0.36	0.36	0.29	0.54	0.54
Delay/Veh:	65.5	0.0	0.0	50.7	55.2	55.2	60.6	21.3	21.3	59.7	26.4	26.4
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:	65.5	0.0	0.0	50.7	55.2	55.2	60.6	21.3	21.3	59.7	26.4	26.4
LOS by Move:	E	A	A	D	E	E	E	C	C	E	C	C
HCM2kAvgQ:	0	0	0	4	9	9	7	9	9	3	16	16

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

4350 EL Camino Real

Level Of Service Computation Report  
2000 HCM Operations (Future Volume Alternative)  
Existing+Project PM

Intersection #2: Del Medio Avenue/El Camino Real



Street Name:	Del Medio Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	0	1	3	45	0	140	123	1925	2	61	1072	98
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1	3	45	0	140	123	1925	2	61	1072	98
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1	3	45	0	140	123	1925	2	61	1072	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1	3	45	0	140	123	1925	2	61	1072	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1	3	45	0	140	123	1925	2	61	1072	98
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
Final Volume:	0	1	3	45	0	140	123	1925	2	61	1072	98

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.92	1.00	0.95	0.92	0.98	0.95	0.92	0.99	0.95
Lanes:	0.00	0.25	0.75	1.00	0.00	1.00	1.00	2.99	0.01	1.00	2.74	0.26
Final Sat.:	0	450	1350	1750	0	1800	1750	5594	6	1750	5130	469

Capacity Analysis Module:

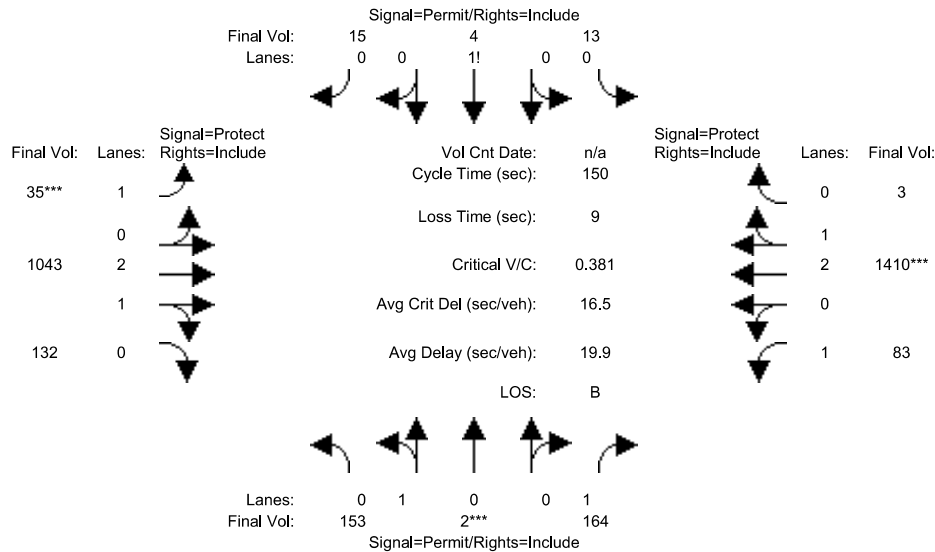
Vol/Sat:	0.00	0.00	0.00	0.03	0.00	0.08	0.07	0.34	0.34	0.03	0.21	0.21
Crit Moves:	****			****			****			****		
Green Time:	0.0	10.0	10.0	21.8	0.0	21.8	26.7	96.4	96.4	9.8	79.5	79.5
Volume/Cap:	0.00	0.03	0.03	0.18	0.00	0.54	0.39	0.54	0.54	0.54	0.39	0.39
Delay/Veh:	0.0	65.6	65.6	56.6	0.0	61.6	55.3	14.7	14.7	72.8	21.0	21.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	65.6	65.6	56.6	0.0	61.6	55.3	14.7	14.7	72.8	21.0	21.0
LOS by Move:	A	E	E	E	A	E	E	B	B	E	C	C
HCM2kAvgQ:	0	0	0	2	0	7	6	16	16	4	10	10

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

4350 EL Camino Real

Level Of Service Computation Report  
2000 HCM Operations (Future Volume Alternative)  
Background AM

Intersection #1: Los Altos Avenue / El Camino Real



Street Name:	Los Altos Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	153	2	164	13	4	15	35	1043	132	83	1410	3
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:	153	2	164	13	4	15	35	1043	132	83	1410	3
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:	153	2	164	13	4	15	35	1043	132	83	1410	3
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:	153	2	164	13	4	15	35	1043	132	83	1410	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	153	2	164	13	4	15	35	1043	132	83	1410	3
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
Final Volume:	153	2	164	13	4	15	35	1043	132	83	1410	3

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	0.99	0.01	1.00	0.41	0.12	0.47	1.00	2.65	0.35	1.00	2.99	0.01
Final Sat.:	1777	23	1750	711	219	820	1750	4970	629	1750	5588	12

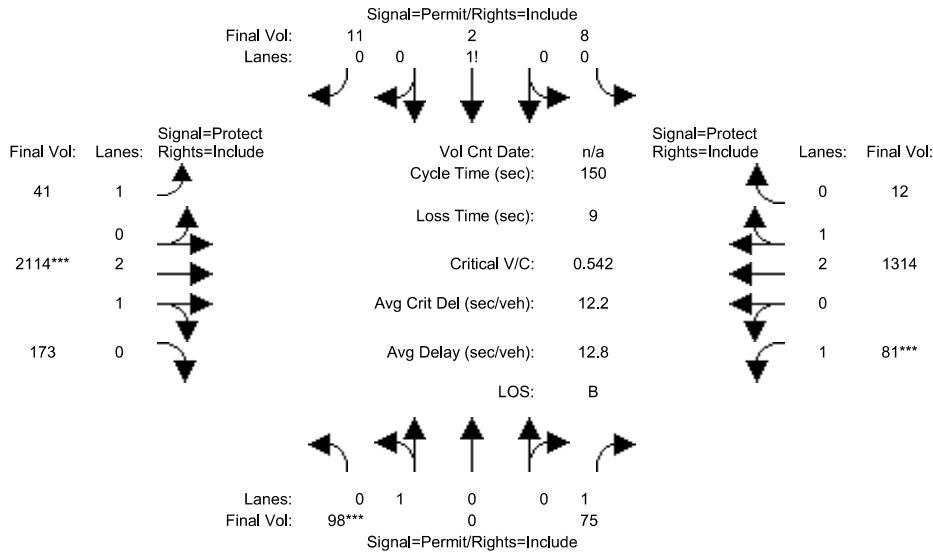
Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.09	0.09	0.09	0.02	0.02	0.02	0.02	0.21	0.21	0.05	0.25	0.25
Crit Moves:	****			****			****			****		
Green Time:	33.9	33.9	33.9	33.9	33.9	33.9	7.9	87.4	87.4	19.7	99.3	99.3
Volume/Cap:	0.38	0.38	0.41	0.08	0.08	0.08	0.38	0.36	0.36	0.36	0.38	0.38
Delay/Veh:	49.8	49.8	50.3	45.9	45.9	45.9	71.3	16.6	16.6	60.3	11.5	11.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.8	49.8	50.3	45.9	45.9	45.9	71.3	16.6	16.6	60.3	11.5	11.5
LOS by Move:	D	D	D	D	D	D	E	B	B	E	B	B
HCM2kAvgQ:	6	6	7	1	1	1	2	9	9	4	10	10

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

4350 EL Camino Real

Level Of Service Computation Report  
2000 HCM Operations (Future Volume Alternative)  
Background PM

Intersection #1: Los Altos Avenue / El Camino Real



Street Name:	Los Altos Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:												
Base Vol:	98	0	75	8	2	11	41	2114	173	81	1314	12
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:	98	0	75	8	2	11	41	2114	173	81	1314	12
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:	98	0	75	8	2	11	41	2114	173	81	1314	12
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:	98	0	75	8	2	11	41	2114	173	81	1314	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	0	75	8	2	11	41	2114	173	81	1314	12
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
Final Volume:	98	0	75	8	2	11	41	2114	173	81	1314	12

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	1.00	0.00	1.00	0.38	0.10	0.52	1.00	2.76	0.24	1.00	2.97	0.03
Final Sat.:	1800	0	1750	667	167	917	1750	5176	424	1750	5549	51

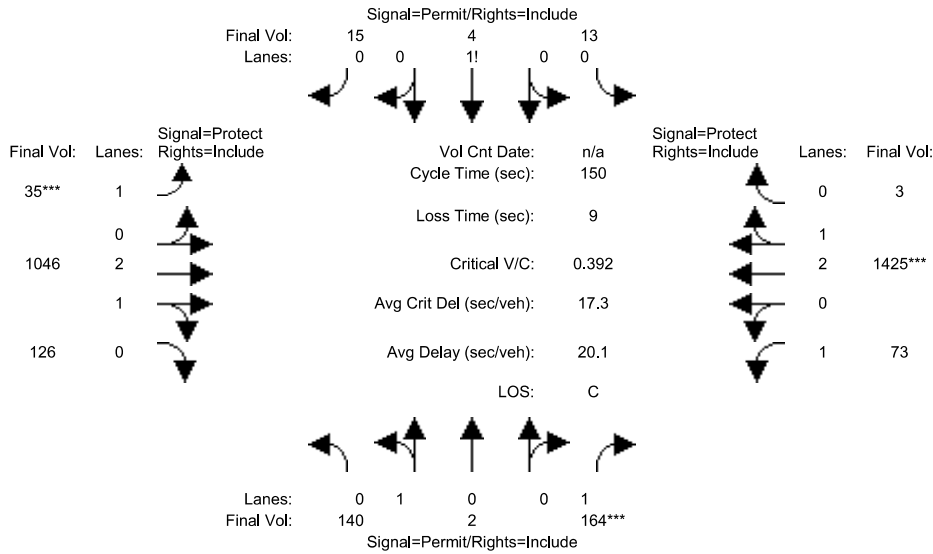
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.04	0.01	0.01	0.01	0.02	0.41	0.41	0.05	0.24	0.24
Crit Moves:	****							****		****		
Green Time:	15.1	0.0	15.1	15.1	15.1	15.1	20.7	113	113.1	12.8	105	105.2
Volume/Cap:	0.54	0.00	0.43	0.12	0.12	0.12	0.17	0.54	0.54	0.54	0.34	0.34
Delay/Veh:	67.5	0.0	65.1	61.7	61.7	61.7	57.4	7.8	7.8	69.8	8.8	8.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.5	0.0	65.1	61.7	61.7	61.7	57.4	7.8	7.8	69.8	8.8	8.8
LOS by Move:	E	A	E	E	E	E	E	A	A	E	A	A
HCM2kAvgQ:	5	0	4	1	1	1	2	15	15	5	8	8

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

4350 EL Camino Real

Level Of Service Computation Report  
2000 HCM Operations (Future Volume Alternative)  
Background +P AM

Intersection #1: Los Altos Avenue / El Camino Real



Street Name:	Los Altos Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	140	2	164	13	4	15	35	1046	126	73	1425	3
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:	140	2	164	13	4	15	35	1046	126	73	1425	3
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:	140	2	164	13	4	15	35	1046	126	73	1425	3
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:	140	2	164	13	4	15	35	1046	126	73	1425	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	140	2	164	13	4	15	35	1046	126	73	1425	3
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
Final Volume:	140	2	164	13	4	15	35	1046	126	73	1425	3

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	0.99	0.01	1.00	0.41	0.12	0.47	1.00	2.67	0.33	1.00	2.99	0.01
Final Sat.:	1775	25	1750	711	219	820	1750	4997	602	1750	5588	12

Capacity Analysis Module:

Vol/Sat:	0.08	0.08	0.09	0.02	0.02	0.02	0.02	0.21	0.21	0.04	0.26	0.26
Crit Moves:	****			****			****			****		
Green Time:	35.8	35.8	35.8	35.8	35.8	35.8	7.6	86.0	86.0	19.2	97.5	97.5
Volume/Cap:	0.33	0.33	0.39	0.08	0.08	0.08	0.39	0.37	0.37	0.33	0.39	0.39
Delay/Veh:	47.6	47.6	48.5	44.3	44.3	44.3	71.8	17.3	17.3	60.4	12.4	12.4
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:	47.6	47.6	48.5	44.3	44.3	44.3	71.8	17.3	17.3	60.4	12.4	12.4
LOS by Move:	D	D	D	D	D	D	E	B	B	E	B	B
HCM2kAvgQ:	6	6	7	1	1	1	2	10	10	3	10	10

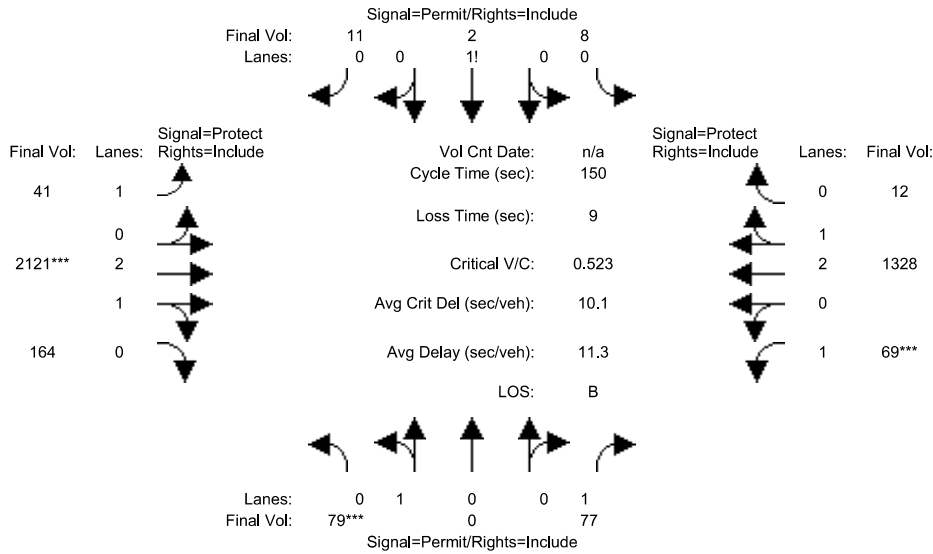
Note: Queue reported is the number of cars per lane.



4350 EL Camino Real

Level Of Service Computation Report  
2000 HCM Operations (Future Volume Alternative)  
Background +P PM

Intersection #1: Los Altos Avenue / El Camino Real



Street Name:	Los Altos Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	79	0	77	8	2	11	41	2121	164	69	1328	12
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:	79	0	77	8	2	11	41	2121	164	69	1328	12
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:	79	0	77	8	2	11	41	2121	164	69	1328	12
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:	79	0	77	8	2	11	41	2121	164	69	1328	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	79	0	77	8	2	11	41	2121	164	69	1328	12
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
Final Volume:	79	0	77	8	2	11	41	2121	164	69	1328	12

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	1.00	0.00	1.00	0.38	0.10	0.52	1.00	2.78	0.22	1.00	2.97	0.03
Final Sat.:	1800	0	1750	667	167	917	1750	5198	402	1750	5550	50

Capacity Analysis Module:

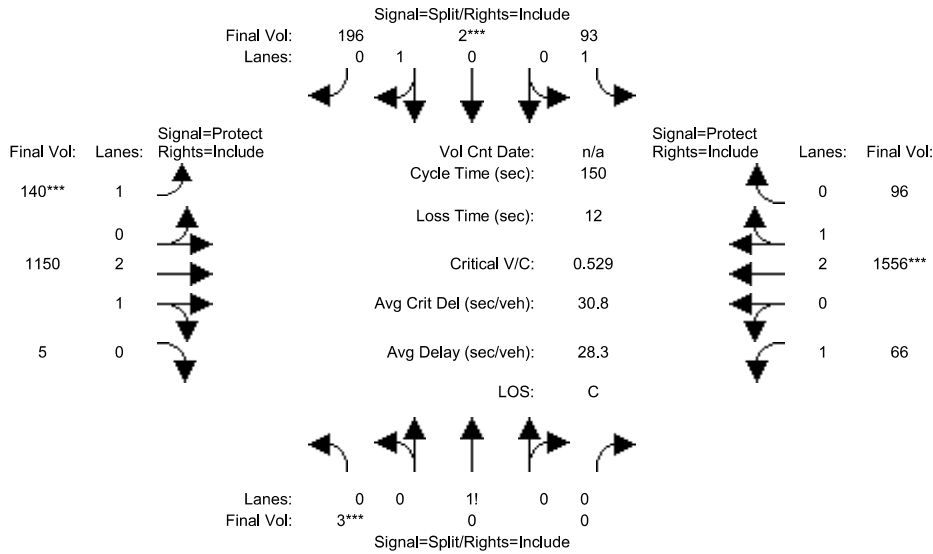
Vol/Sat:	0.04	0.00	0.04	0.01	0.01	0.01	0.02	0.41	0.41	0.04	0.24	0.24
Crit Moves:	****							****		****		
Green Time:	12.6	0.0	12.6	12.6	12.6	12.6	21.0	117	117.1	11.3	107	107.5
Volume/Cap:	0.52	0.00	0.52	0.14	0.14	0.14	0.17	0.52	0.52	0.52	0.33	0.33
Delay/Veh:	69.1	0.0	69.3	64.1	64.1	64.1	57.2	6.2	6.2	70.5	8.0	8.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.1	0.0	69.3	64.1	64.1	64.1	57.2	6.2	6.2	70.5	8.0	8.0
LOS by Move:	E	A	E	E	E	E	E	A	A	E	A	A
HCM2kAvgQ:	4	0	4	1	1	1	2	13	13	4	8	8

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

4350 EL Camino Real

Level Of Service Computation Report  
2000 HCM Operations (Future Volume Alternative)  
Background AM

Intersection #2: Del Medio Avenue/El Camino Real



Street Name:	Del Medio Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	3	0	0	93	2	196	140	1150	5	66	1556	96
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:	3	0	0	93	2	196	140	1150	5	66	1556	96
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:	3	0	0	93	2	196	140	1150	5	66	1556	96
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:	3	0	0	93	2	196	140	1150	5	66	1556	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	0	0	93	2	196	140	1150	5	66	1556	96
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
Final Volume:	3	0	0	93	2	196	140	1150	5	66	1556	96

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	0.00	0.00	1.00	0.01	0.99	1.00	2.99	0.01	1.00	2.82	0.18
Final Sat.:	1750	0	0	1750	18	1782	1750	5576	24	1750	5274	325

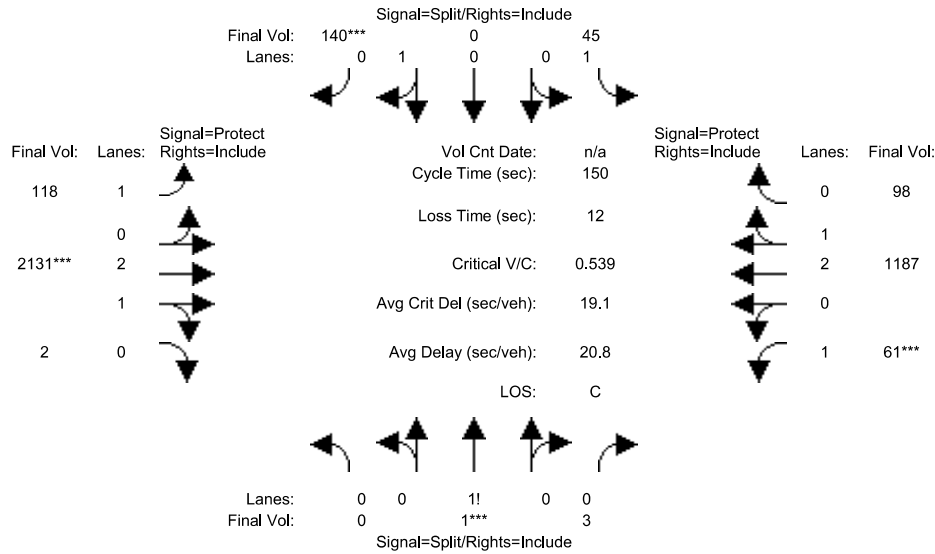
Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.00	0.00	0.00	0.05	0.11	0.11	0.08	0.21	0.21	0.04	0.30	0.30
Crit Moves:	***			****			****			****		
Green Time:	10.0	0.0	0.0	29.0	29.0	29.0	21.1	80.7	80.7	18.3	77.9	77.9
Volume/Cap:	0.03	0.00	0.00	0.27	0.57	0.57	0.57	0.38	0.38	0.31	0.57	0.57
Delay/Veh:	65.5	0.0	0.0	52.0	57.0	57.0	63.3	20.2	20.2	60.9	24.9	24.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.5	0.0	0.0	52.0	57.0	57.0	63.3	20.2	20.2	60.9	24.9	24.9
LOS by Move:	E	A	A	D	E	E	E	C	C	E	C	C
HCM2kAvgQ:	0	0	0	4	9	9	7	10	10	3	17	17

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

4350 EL Camino Real

Level Of Service Computation Report  
2000 HCM Operations (Future Volume Alternative)  
Background PM

Intersection #2: Del Medio Avenue/El Camino Real



Street Name:	Del Medio Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:												
Base Vol:	0	1	3	45	0	140	118	2131	2	61	1187	98
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1	3	45	0	140	118	2131	2	61	1187	98
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1	3	45	0	140	118	2131	2	61	1187	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1	3	45	0	140	118	2131	2	61	1187	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1	3	45	0	140	118	2131	2	61	1187	98
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
Final Volume:	0	1	3	45	0	140	118	2131	2	61	1187	98

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.92	1.00	0.95	0.92	0.98	0.95	0.92	0.99	0.95
Lanes:	0.00	0.25	0.75	1.00	0.00	1.00	1.00	2.99	0.01	1.00	2.76	0.24
Final Sat.:	0	450	1350	1750	0	1800	1750	5595	5	1750	5172	427

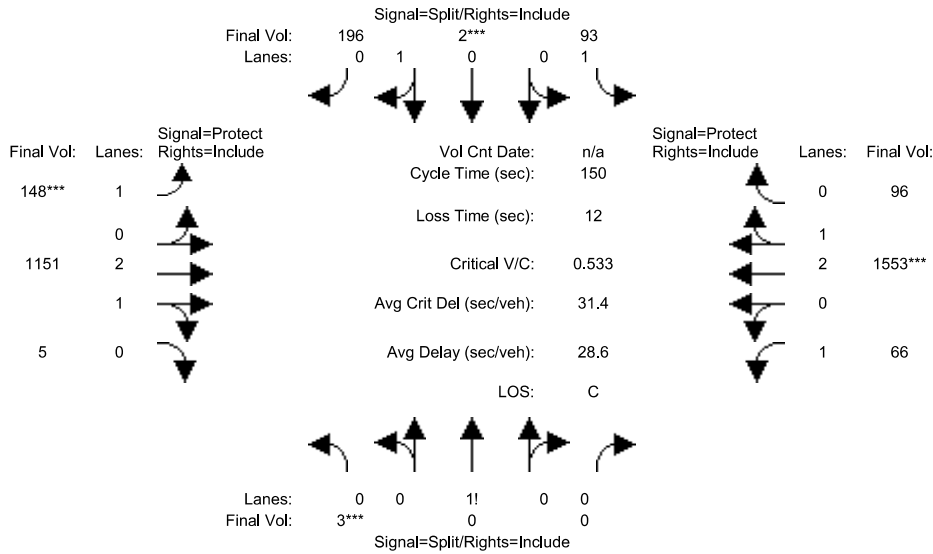
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.03	0.00	0.08	0.07	0.38	0.38	0.03	0.23	0.23
Crit Moves:	****			****			****			****		
Green Time:	0.0	10.0	10.0	20.2	0.0	20.2	24.5	98.8	98.8	9.0	83.3	83.3
Volume/Cap:	0.00	0.03	0.03	0.19	0.00	0.58	0.41	0.58	0.58	0.58	0.41	0.41
Delay/Veh:	0.0	65.6	65.6	58.1	0.0	64.4	57.3	14.4	14.4	76.4	19.3	19.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	65.6	65.6	58.1	0.0	64.4	57.3	14.4	14.4	76.4	19.3	19.3
LOS by Move:	A	E	E	E	A	E	E	B	B	E	B	B
HCM2kAvgQ:	0	0	0	2	0	7	5	18	18	4	11	11

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

4350 EL Camino Real

Level Of Service Computation Report  
2000 HCM Operations (Future Volume Alternative)  
Background +P AM

Intersection #2: Del Medio Avenue/El Camino Real



Street Name:	Del Medio Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	3	0	0	93	2	196	148	1151	5	66	1553	96
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:	3	0	0	93	2	196	148	1151	5	66	1553	96
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:	3	0	0	93	2	196	148	1151	5	66	1553	96
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:	3	0	0	93	2	196	148	1151	5	66	1553	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	0	0	93	2	196	148	1151	5	66	1553	96
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
Final Volume:	3	0	0	93	2	196	148	1151	5	66	1553	96

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	0.00	0.00	1.00	0.01	0.99	1.00	2.99	0.01	1.00	2.82	0.18
Final Sat.:	1750	0	0	1750	18	1782	1750	5576	24	1750	5274	326

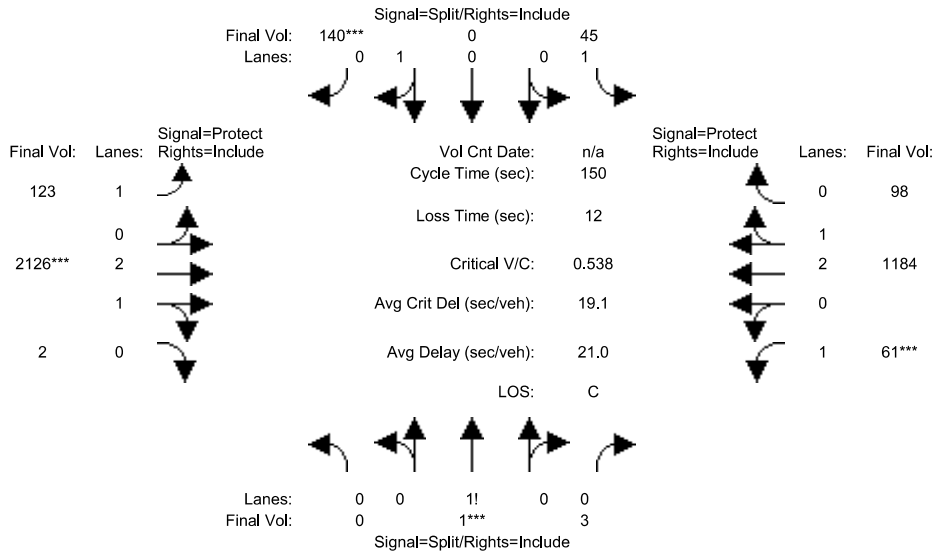
Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.00	0.00	0.00	0.05	0.11	0.11	0.08	0.21	0.21	0.04	0.29	0.29
Crit Moves:	***			****			****			****		
Green Time:	10.0	0.0	0.0	28.8	28.8	28.8	22.1	80.9	80.9	18.3	77.1	77.1
Volume/Cap:	0.03	0.00	0.00	0.28	0.57	0.57	0.57	0.38	0.38	0.31	0.57	0.57
Delay/Veh:	65.5	0.0	0.0	52.2	57.4	57.4	62.6	20.1	20.1	60.9	25.4	25.4
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:	65.5	0.0	0.0	52.2	57.4	57.4	62.6	20.1	20.1	60.9	25.4	25.4
LOS by Move:	E	A	A	D	E	E	E	C	C	E	C	C
HCM2kAvgQ:	0	0	0	4	9	9	7	10	10	3	17	17

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

4350 EL Camino Real

Level Of Service Computation Report  
2000 HCM Operations (Future Volume Alternative)  
Background +P PM

Intersection #2: Del Medio Avenue/El Camino Real



Street Name:	Del Medio Avenue						El Camino Real					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	0	1	3	45	0	140	123	2126	2	61	1184	98
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1	3	45	0	140	123	2126	2	61	1184	98
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1	3	45	0	140	123	2126	2	61	1184	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1	3	45	0	140	123	2126	2	61	1184	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1	3	45	0	140	123	2126	2	61	1184	98
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
Final Volume:	0	1	3	45	0	140	123	2126	2	61	1184	98

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.92	1.00	0.95	0.92	0.98	0.95	0.92	0.99	0.95
Lanes:	0.00	0.25	0.75	1.00	0.00	1.00	1.00	2.99	0.01	1.00	2.76	0.24
Final Sat.:	0	450	1350	1750	0	1800	1750	5595	5	1750	5171	428

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.00	0.00	0.00	0.03	0.00	0.08	0.07	0.38	0.38	0.03	0.23	0.23
Crit Moves:	****			****			****			****		
Green Time:	0.0	10.0	10.0	20.2	0.0	20.2	25.3	98.7	98.7	9.1	82.5	82.5
Volume/Cap:	0.00	0.03	0.03	0.19	0.00	0.58	0.42	0.58	0.58	0.58	0.42	0.42
Delay/Veh:	0.0	65.6	65.6	58.0	0.0	64.3	56.7	14.4	14.4	76.3	19.8	19.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	65.6	65.6	58.0	0.0	64.3	56.7	14.4	14.4	76.3	19.8	19.8
LOS by Move:	A	E	E	E	A	E	E	B	B	E	B	B
HCM2kAvgQ:	0	0	0	2	0	7	6	18	18	4	11	11

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



## **Appendix C**

### **Volume Spreadsheet**

Intersection Number: 1  
 Traffix Node Number: 1  
 Intersection Name: Los Altos Avenue and El Camino Real  
 Peak Hour: AM  
 Count Date: 5/29/2019

Growth Factor Per Year: 2% Near Term Buildout: 5

Scenario:	Movements												Total
	North Approach			East Approach			South Approach			West Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
<b>Existing Conditions</b>	15	4	13	3	1277	83	164	2	153	132	945	35	2826
<b>Background Conditions</b>	15	4	13	3	1410	83	164	2	153	132	1043	35	3057
<b>Project Trips</b>	0	0	0	0	15	-10	0	0	-13	-6	3	0	-11
<b>Existing Plus Project Conditions</b>	15	4	13	3	1292	73	164	2	140	126	948	35	2815
<b>Background Plus Project Conditions</b>	15	4	13	3	1425	73	164	2	140	126	1046	35	3046

Intersection Number: 2  
 Traffix Node Number: 2  
 Intersection Name: Del Medio Avenue and El Camino Real  
 Peak Hour: AM  
 Count Date: 11/15/2017

Growth Factor Per Year: 2% Near Term Buildout: 5

Scenario:	Movements												Total
	North Approach			East Approach			South Approach			West Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
<b>Existing Conditions</b>	196	2	93	96	1409	66	0	0	3	5	1042	140	3052
<b>Background Conditions</b>	196	2	93	96	1556	66	0	0	3	5	1150	140	3307
<b>Project Trips</b>	0	0	0	0	-3	0	0	0	0	0	1	8	6
<b>Existing Plus Project Conditions</b>	196	2	93	96	1406	66	0	0	3	5	1043	148	3058
<b>Background Plus Project Conditions</b>	196	2	93	96	1553	66	0	0	3	5	1151	148	3313

Intersection Number: 1  
 Traffix Node Number: 1  
 Intersection Name: Los Altos Avenue and El Camino Real  
 Peak Hour: PM  
 Count Date: 5/29/2019

Growth Factor Per Year: 2%      Near Term Buildout: 5

Scenario:	Movements												Total
	North Approach			East Approach			South Approach			West Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
<b>Existing Conditions</b>	11	2	8	12	1190	81	75	0	98	173	1915	41	3606
<b>Background Conditions</b>	11	2	8	12	1314	81	75	0	98	173	2114	41	3929
<b>Net Project Trips</b>	0	0	0	0	14	-12	2	0	-19	-9	7	0	-17
<b>Existing Plus Project Conditions</b>	11	2	8	12	1204	69	77	0	79	164	1922	41	3589
<b>Background Plus Project Conditions</b>	11	2	8	12	1328	69	77	0	79	164	2121	41	3912

Intersection Number: 2  
 Traffix Node Number: 2  
 Intersection Name: Del Medio Avenue and El Camino Real  
 Peak Hour: PM  
 Count Date: 5/29/2019

Growth Factor Per Year: 2%      Near Term Buildout: 5

Scenario:	Movements												Total
	North Approach			East Approach			South Approach			West Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	
<b>Existing Conditions</b>	140	0	45	98	1075	61	3	1	0	2	1930	118	3473
<b>Background Conditions</b>	140	0	45	98	1187	61	3	1	0	2	2131	118	3786
<b>Net Project Trips</b>	0	0	0	0	-3	0	0	0	0	0	-5	5	-3
<b>Existing Plus Project Conditions</b>	140	0	45	98	1072	61	3	1	0	2	1925	123	3470
<b>Background Plus Project Conditions</b>	140	0	45	98	1184	61	3	1	0	2	2126	123	3783