Draft Report

Los Altos Community Center Master Plan Traffic Study

Prepared for

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AECOM

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1.0 INTRODUCTION

The City of Los Altos plans to redevelop the City's Community Center (CC) located at the corner of San Antonio Road and Hillview Avenue with a master plan that incorporates the desires of Los Altos residents, while retaining the unique values of the City of Los Altos. There are several city facilities within the Community Center that will be rebuilt/replaced as part of this project. The City intends to take this opportunity to re-configure the 18-acre site to a more modern, energy-efficient and improved complex that would support the needs of Los Altos residents. The facilities that are currently part of the project site are:

- Los Altos City Hall
- Los Altos Police Department
- Los Altos Library.
- Nuetra House
- Los Altos Youth Center
- History House and Museum
- Bus Barn Theater
- Hillview Community Center, including the Children's Corner and the Senior Center

Figure 1-1 illustrates the existing project site plan. Some of these facilities will be rebuilt or retained and others removed. The Los Altos Community Pool, originally considered for construction on the Covington School campus, will be incorporated as part of this development plan. In addition, an underground parking garage has been proposed to replace some surface parking that would give way to more open space in the project site. With this proposal, traffic in the vicinity of the CC is expected to change. This report presents the traffic impact analysis of the proposed CC as presented to the Los Altos City Council by Anderson Brule Architects on June 9th, 2009.

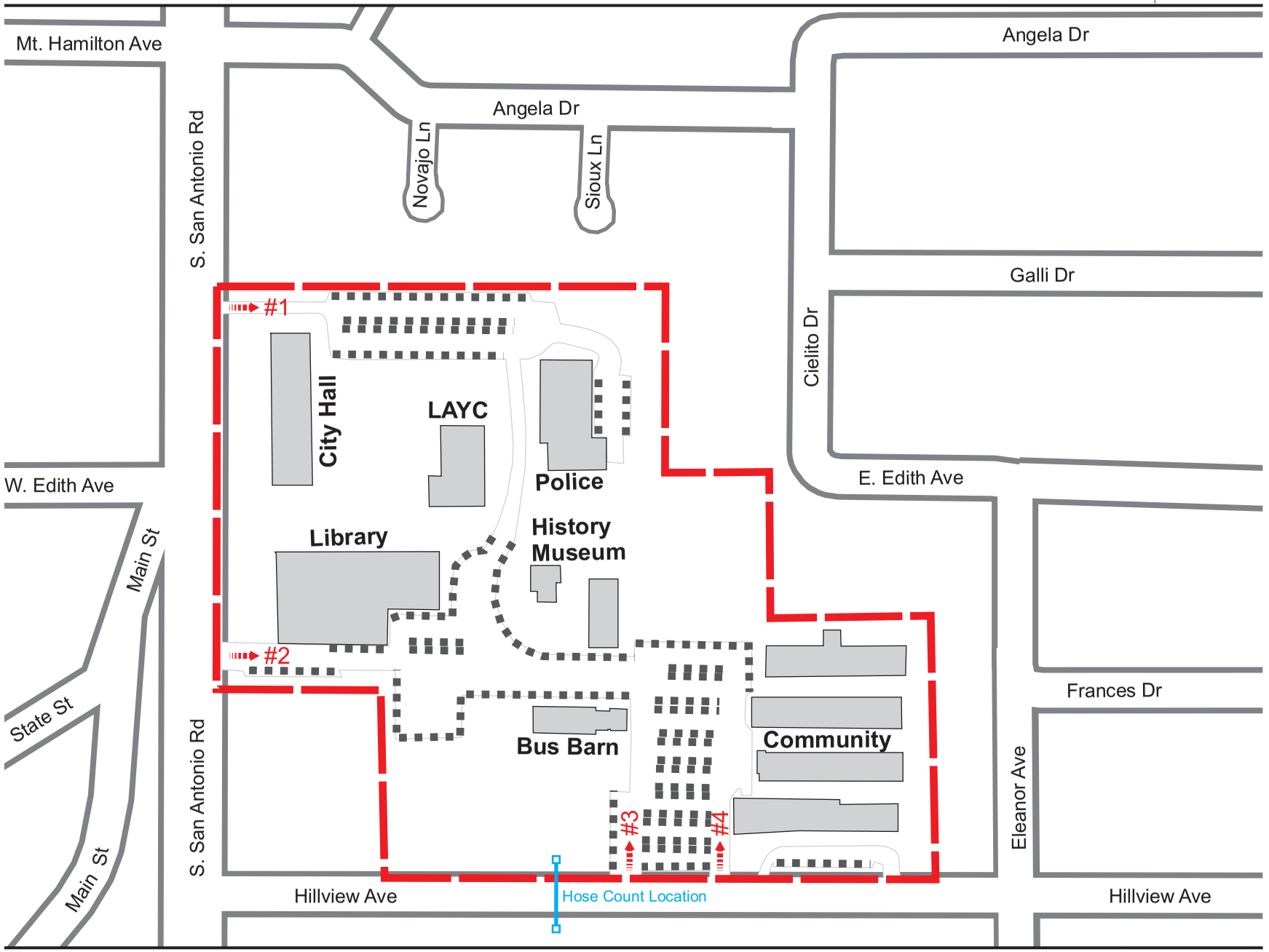
The AM (7:00am – 9:00 am) and PM (4:00 pm – 6:00 pm) peak hour scenarios evaluated in this study are:

1. Existing conditions
2. Existing plus approved projects (background conditions)
3. Existing plus approved projects (background conditions) plus Project
4. 2028 year Cumulative conditions (i.e. background conditions projected to 2028) plus Project)

1.1 Study Area

The project site is located near the downtown area of the City of Los Altos. A total of six intersections have been included in this study. Figure 1-2 presents the study area, indicating the study intersections. The five signalized and one unsignalized intersections are:

1. San Antonio Road / West Edith Avenue / Main Street
2. San Antonio Road / Hillview Avenue (unsignalized)
3. San Antonio Road / First Street / Cuesta Drive
4. San Antonio Road / Foothill Expressway
5. West Edith Avenue / First Street
6. West Edith Avenue / Los Altos Avenue / Foothill Expressway



SOURCE: AECOM

LOS ALTOS COMMUNITY CENTER

Surface Parking Area

#1 Access

FIGURE 1-1

EXISTING PROJECT SITE PLAN

(N.T.S.)

LOS ALTOS COMMUNITY CENTER

Figure 1-2

STUDY AREA AND INTERSECTIONS

2.0 EXISTING CONDITIONS

This section presents the existing traffic conditions. Intersection performance, site circulation, parking provision, performance of roadway segment, transit network and non-motorized facilities (for pedestrians and bicyclists) will be discussed.

2.1 Intersection Performance

A total of six intersections near the project site have been included in this study. Turning movement counts at the intersection of San Antonio Road / Hillview Avenue (#3) were collected in March 2009 together with the 24-hour traffic count along Hillview Avenue. Traffic volume counts for other intersections were obtained from two earlier studies; *City of Los Altos Downtown-Wide Traffic and Parking Analysis* (AECOM, January 2008) and *45 Main Street Los Altos* (Fehr and Peers, August 2007).

2.1.1 Intersection Analysis Methodology

The current procedures adopted for intersection operational analysis in Santa Clara County are according to the Highway Capacity Manual (HCM) 2000. HCM 2000 analysis is applied via the TRAFFIX 8.0 software package per the requirements of the Santa Clara County Congestion Management Agency. Level of service for signalized intersections is defined in terms of control delay. The definitions of level of service (LOS) A through F are noted in Table 2-1. Control delay includes initial deceleration delay, queue move-up time, stopped delay and final acceleration delay. Average control delay weighs the delay per movement according to the traffic volumes for that movement. The critical volume to capacity (v/c) ratio is an approximate indicator of the overall efficiency of an intersection. The critical v/c ratio depends on the conflicting critical lane flow rates and the signal phasing. V/C ranges from 1.0 when the flow rate equals capacity to 0.0 when the flow rate is zero. Values above 1.0 indicate an excess of demand over capacity. Average critical delay weighs the delay for the critical (conflicting) movements based on the traffic volume for that movement.

There is no specific methodology for analyzing unsignalized intersections in the Congestion Management Program (CMP). For this report, the HCM 2000 methodology for unsignalized intersection, supported by TRAFFIX software, is used for the unsignalized intersection LOS calculations. Table 2-2 lists the thresholds for the LOS for unsignalized intersections. At two-way or side-street controlled intersections, LOS is calculated for each controlled movement, not for the intersection as a whole. For single approaches, the control delay is computed as the average of all movements in that lane. The threshold values for unsignalized intersections are different than the threshold values for signalized intersections due to different driver expectations of level of performance. Higher delay for the same LOS is acceptable at a signalized intersection as a signalized intersection is expected to serve larger traffic volumes.

Table 2-1
CMP Signalized Intersection Level of Service Thresholds

LOS	Average Control Delay (seconds/vehicle)
A	delay ≤ 10.0
B+	10.0 < delay ≤ 12.0
B	12.0 < delay ≤ 18.0
B-	18.0 < delay ≤ 20.0
C+	20.0 < delay ≤ 23.0
C	13.0 < delay ≤ 32.0
C-	32.0 < delay ≤ 35.0
D+	35.0 < delay ≤ 39.0
D	39.0 < delay ≤ 51.0
D-	51.0 < delay ≤ 55.0
E+	55.0 < delay ≤ 60.0
E	60.0 < delay ≤ 75.0
E-	75.0 < delay ≤ 80.0
F	delay > 80.0

Source: Santa Clara Valley Transportation Authority Congestion Management Program, Transportation Impact Analysis Guidelines, June 2003.

Table 2-2
Unsignalized Intersection Level of Service Definitions

Level of Service	Description	Average Control Delay (seconds/vehicle)
A	Little or no delay	delay ≤ 10.0
B	Short traffic delays	10.0 < delay ≤ 15.0
C	Average traffic delays	15.0 < delay ≤ 25.0
D	Long traffic delays	25.0 < delay ≤ 35.0
E	Very long traffic delays	35.0 < delay ≤ 50.0
F	Extreme traffic delays with intersection capacity exceeded	delay > 50.0

Source: HCM 2000.

2.1.2 Significance Criteria

The level of service standard defined as acceptable by the City of Los Altos is LOS D or better for City controlled intersections. Whereas, the VTA defines an acceptable operating level of service as LOS E or better for CMP designated intersections. However, even CMP intersections within the City of Los Altos are expected to meet the City's LOS policy. Significant project impact for signalized intersection is defined as:

- The intersection operating at level D or better under No Build Conditions deteriorates to LOS E or F, or

- An increase in the critical movement delay at an intersection operating at LOS E or F under No Build Conditions by four (4) or more seconds and an increase in the critical V/C ratio by 0.01 or more.

For the purpose of this study, the minimum acceptable LOS for usignalized intersections will be defined as LOS D. Project impact for unsignalized intersection is defined as:

- The intersection operating at level D or better under No Build Conditions deteriorates to LOS E or F, or
- The intersection already operating at LOS E or F worsens due to increasing control delay, and
- The total volumes under 'With Project' conditions exceed the Caltrans Peak Hour Volume Warrant Criteria.

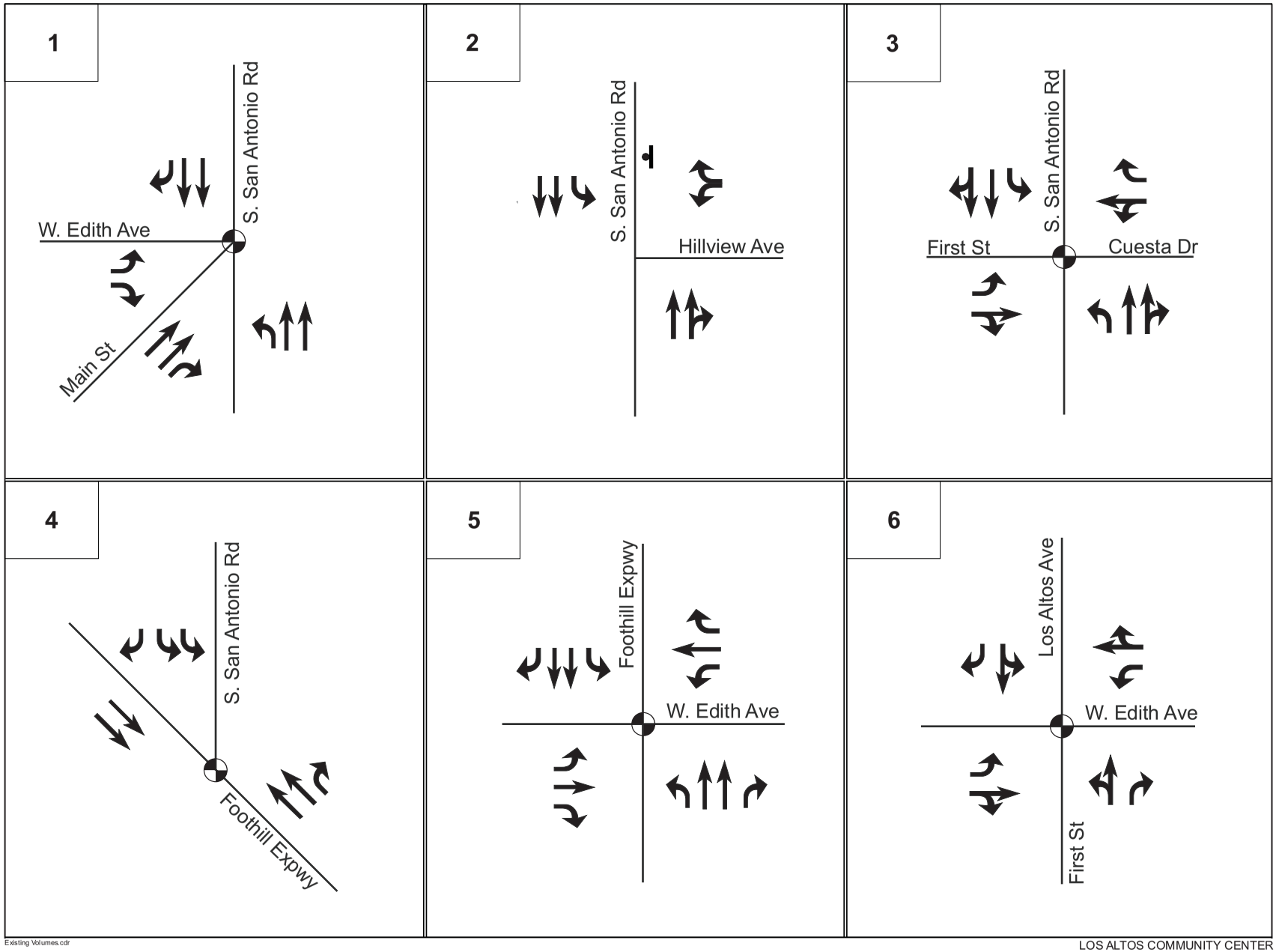
2.1.3 Intersection Analysis

Table 2-3 presents the existing intersections' performance. The existing geometry for all study intersection is presented in Figure 2-1 while Figure 2-2 shows the existing traffic volumes. Under existing conditions, all six study intersections operate at an acceptable LOS. While most intersections have slightly higher delays during the PM peak hour, all levels of service are within the acceptable LOS D. Appendix A presents the TRAFFIX analysis results.

Table 2-3
Existing LOS for Study Intersections

Intersection		Peak Hour	Existing Condition			
			LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)
#1	San Antonio Road / West Edith Ave / Main Street	AM	C+	21.4	0.516	30.7
		PM	C	27.4	0.756	33.2
#2	San Antonio Road / Hillview Avenue (Unsignalized)	AM	C	22.4	0.167	22.4
		PM	D	27.0	0.304	27.0
#3	San Antonio Road / First Street / Cuesta Drive	AM	B	15.7	0.460	14.9
		PM	B	14.7	0.527	12.4
#4	San Antonio Road / Foothill Expressway*	AM	B	12.9	0.644	13.7
		PM	B	18.0	0.881	23.7
#5	Foothill Expressway / West Edith Avenue	AM	C+	22.2	0.620	20.8
		PM	C+	22.2	0.587	23.4
#6	First Street / Los Altos Avenue / West Edith Avenue	AM	B-	18.7	0.450	20.2
		PM	B-	19.9	0.608	22.9

*CMP monitored Intersection
Source: AECOM April 2009



Existing Volumes.cdr

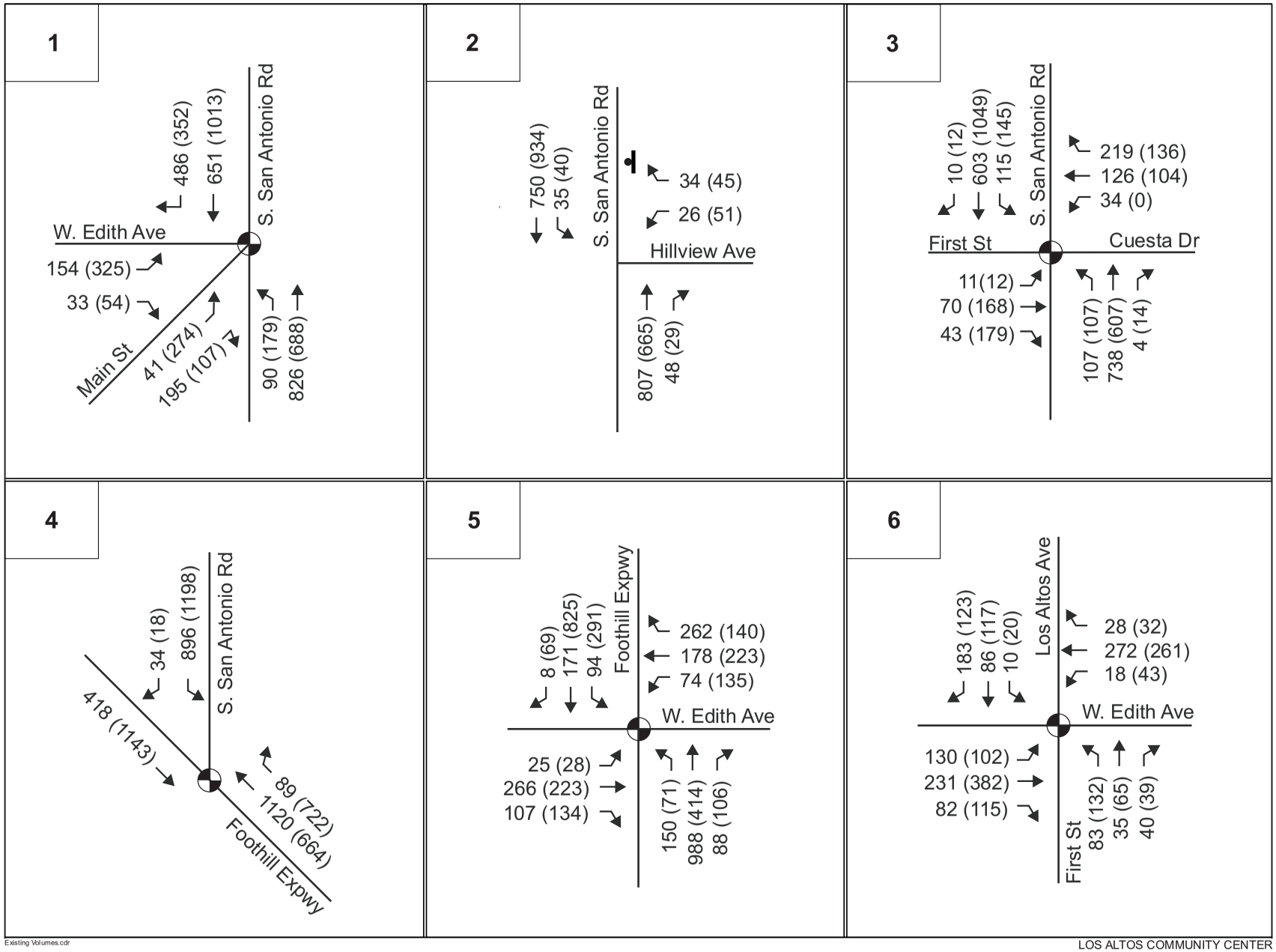
LOS ALTOS COMMUNITY CENTER

Traffic Signal

Stop Sign

Figure 2-1

EXISTING INTERSECTION GEOMETRY



Existing Volumes.cdr

LOS ALTOS COMMUNITY CENTER

Traffic Signal

Stop Sign

AM (PM) Peak Hour

Figure 2-2

EXISTING TRAFFIC VOLUMES

2.2 Roadway Network

Interstate 280 (I-280), Foothill Expressway and El Camino Real provide regional access to the project site. Local access is provided by San Antonio Road, W. Edith Aveune, Cuesta Drive and El Monte Avenue.

- Interstate 280 (Junipero Serra Freeway) is an eight-lane facility in the project area under the jurisdiction of Caltrans. In the study area, I-280 has an interchange serving Los Altos at El Monte Avenue. Interstate 280 is classified as a freeway in the north-south direction.
- Foothill Expressway is a four-lane divided expressway that extends between Cupertino and Palo Alto through Los Altos. It has eight access points with the Los Altos city limits including an interchange with I-280. The two access points nearest the project site are at San Antonio Road and El Monte Avenue.
- El Camino Real (State Route 82) is an arterial that runs north-south from San Francisco to San Jose, parallel and between US 101 and I-280. El Camino Real is a six-lane roadway between San Antonio Road and El Monte Avenue. El Camino Real is classified as an arterial.
- San Antonio Road is primarily a four-lane divided roadway that connects Los Altos to US 101, with its west terminus at Foothill Expressway.
- W. Edith Avenue is a two-lane undivided collector road in the City of Los Altos. It stretches between San Antonio Road to W. Fremont Road in Los Altos Hills.
- Hillview Avenue is a two-lane undivided local roadway that connects residential areas east of the project site to San Antonio Road.
- El Monte Avenue is a two-lane roadway north of Foothill Expressway and a four-lane roadway between Foothill Expressway and I-280. It is generally oriented in the northeast-southwest direction with its northern end at El Camino Real.
- Cuesta Drive extends between San Antonio Road and Grant Road in the City of Mountain View. Through the City of Los Altos, it is a two-lane road. Between Springer Road and Miramonte Avenue in Mountain View, it is a three lane road with two-way center left-turn lane. From Miramonte Avenue to Grant Road, Cuesta Drive is a four-lane road.

2.3 Residential Roadway

Traffic count data was obtained for 24 hours along Hillview Avenue over 2 days to determine its Average Daily Traffic (ADT). The count location is indicated in Figure 1-2. This allowed evaluation of the Traffic Infusion on Residential Environment (TIRE) Index. The existing ADT along Hillview Avenue is 1,557 vehicles which gives a TIRE Index of

3.2. If a project causes a change of 0.1 to the TIRE Index, it is considered to cause an impact to the roadway, according to the TIRE Index table. The threshold traffic volume for the change on Hillview Avenue is 380 or more vehicles per day.

2.4 Transit Network

The Santa Clara Valley Transportation Authority (VTA) operates bus service #40 along San Antonio Road between Foothill College in Los Altos Hills and Shoreline Boulevard in Mountain View. There is a bus stop at the corner of San Antonio Road and Hillview Avenue for access to the library and CC area. There is also a bus stop along San Antonio Road near the existing access driveway to City Hall. This service passes by the San Antonio Transit Center in Mountain View where passengers can transfer to other VTA services and the Marguerite Shuttle operated by Stanford. Route #40 runs daily with weekdays beginning at 5:30 am until 10:30 pm. Saturday's schedule is shorter from 8:00 am to 7:00 pm and Sunday's schedule is from 9:10 am to 7:15 pm. The headways for this route are about 30 minutes Monday through Saturday and 60 minutes on Sundays. Figure 2-3 presents the transit network around the study area.

From San Antonio Transit Center, passengers can also walk about ½ mile to the San Antonio Caltrain Station. The *Peninsula Corridor Joint Powers Board* rail service, Caltrain, runs north-south along the Peninsula from San Francisco to San Jose with some service extending to Gilroy. The current weekday schedule consists of frequent train intervals (5 to 30 minutes) during commute hours, with hourly service provided during non-commute times and during the weekends. Caltrain provides a Baby Bullet Express Service that allows under 1-hour travel between San Jose and San Francisco. This service runs during both the AM and PM peak hours in both directions. In addition, Caltrain runs limited-stop Service that serves fewer stations than local service throughout the day between San Jose and San Francisco.

Light Rail services operated by VTA are available at the Mountain View Transit Center. The Mountain View - Winchester Line runs from 4:42 am to past midnight on weekdays and between 5:08 am and 10:30 pm on weekends with various frequencies.

The Shopping Express Marguerite Service operates between Stanford University and San Antonio Transit Center during weekday evening and on weekends of the University's academic year. This service is free and open to the public.

2.5 Pedestrian and Bicycle Facilities

Bicycle travel is an important component of the transportation system connecting Los Altos to Los Altos Hill, Palo Alto and Mountain View. The City first adopted its Bicycle Transportation Plan in 2002 with a subsequent update in 2005. Figure 2-4 shows the bicycle network around the study area.

The existing system consists of three classifications of bicycle facilities:

SOURCE: VTA

LOS ALTOS COMMUNITY CENTER

Figure 2-3

EXISTING TRANSIT NETWORK

Bike Paths Off Street (Class I Bikeway)

Bike Lanes On Street (Class II Bikeway)

Bike Boulevards

SOURCE: VTA

LOS ALTOS COMMUNITY CENTER

Figure 2-4

EXISTING BICYCLE NETWORK

- Class I (bike path) provides an exclusive right-of-way for bicyclists and pedestrians separate from vehicular traffic and with a minimum number of vehicular crossings.
- Class II (bike lane) provides a designated section of the roadway for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross flows by pedestrians and motorists permitted.
- Class III (bike route) provides bicyclists with facility designated by signs or permanent markings that is shared by pedestrians and motorists.

The nearest Class I facility to the study area is along Berry Avenue between El Monte Avenue and Miramonte Avenue. Several Class II facilities can be found along San Antonio Road, El Monte Avenue and Almond Avenue. Bicycles are also allowed on Foothill Expressway.

Pedestrian facilities within the study area are in the form of sidewalks, signalized and unsignalized crossings. Sidewalks are provided at least along one side of most streets around the project site. Signalized crossings can be found along San Antonio Road, at Edith Avenue, Almond Avenue, Cuesta Drive and Foothill Expressway. Unsignalized crossings have been provided along San Antonio Road at intersections with Hillview Avenue, Hawthorne Avenue and Pepper Drive.

2.6 Project Site Circulation and Access

Vehicular access to the CC is taken from San Antonio Road and Hillview Avenue. Drivers can enter from either roadway and drive through the internal road network to the other roadway. From San Antonio Road, drivers gain access to the Library, Police Station and City Hall. From Hillview Avenue, primary access is to the Bus Barn Theater, CC and athletic fields. Full traffic movements are allowed at all accesses. In addition, pedestrians can access the site from the eastern side via E. Edith Avenue. The entire site is connected by its internal road network. Drivers entering from any of the four accesses can access any of the facilities in the site. The current access and circulation network is adequate to meet the current needs.

2.7 Project Site Parking

There are mainly three parking areas within the project site providing a total of 343 parking spaces. There are 242 spaces between the library and CC while the other spaces are at the northern end of the site, closer to City Hall and the Police Department. All parking areas within the project site are connected under the existing layout and there are sufficient parking spaces to meet the current needs under normal circumstances. During large events, however, attendees may end up parking on-street around the project site.

3.0 FUTURE CONDITIONS

Figure 3-1 presents the proposed master plan for the CC adopted by the Los Altos City Council together with the accesses. This plan was developed with the following elements in consideration:

- An improved CC for youth and senior programs
- A larger and improved theater
- A new swim facility
- A larger city hall
- An improved police station
- An expanded library
- Retain the uniqueness of the History museum, history house, Neutra cottage and orchard

It is envisaged that construction will commence when funding is available and the whole redevelopment would be completed by the year 2028. Staging of the development is dependent on funding schedule.

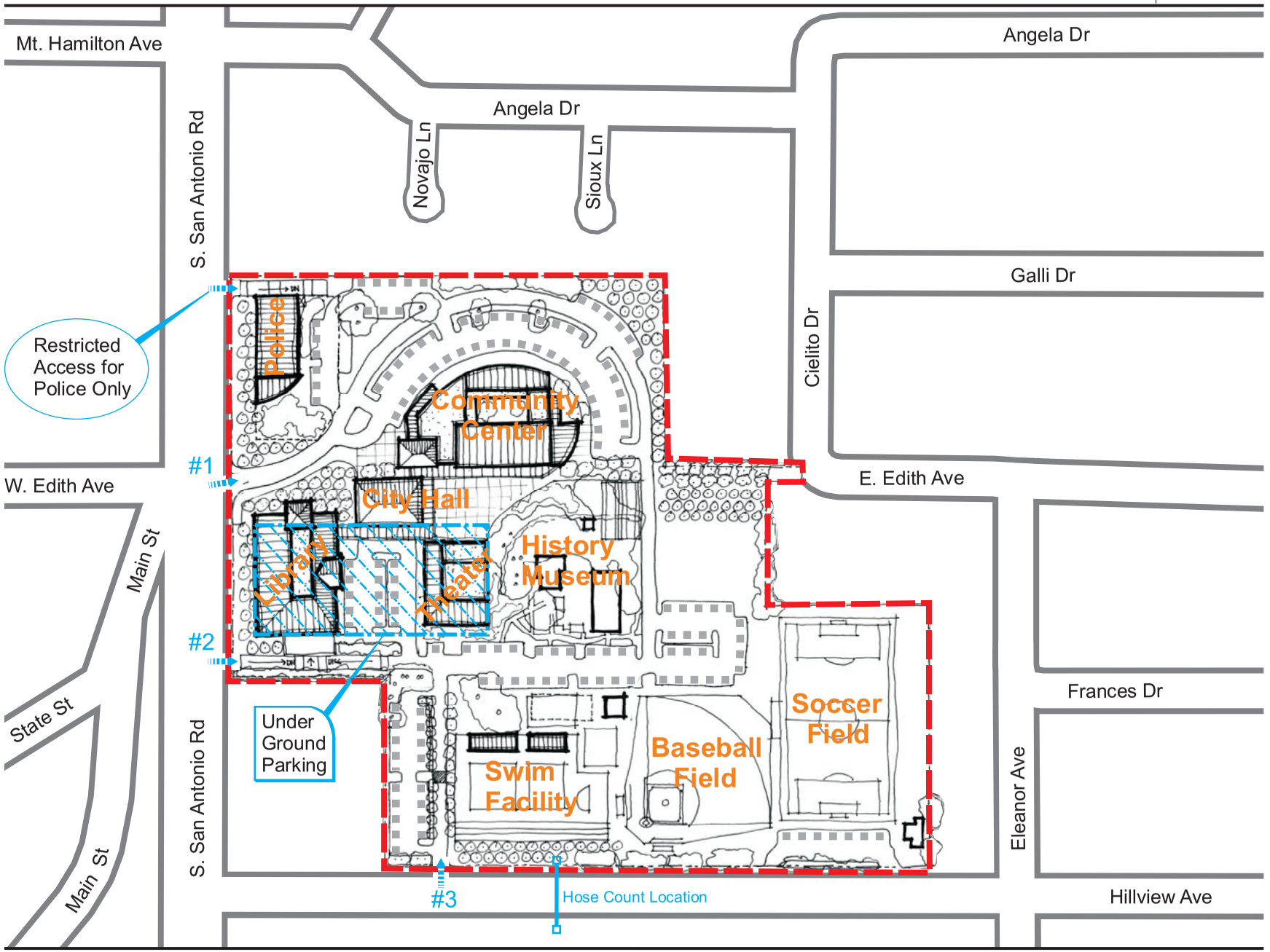
A total of three project scenarios have been analyzed in this study. The first scenario, known as the background condition, is the 'no build' scenario. It is the existing traffic volumes plus the approved projects in the study area vicinity. This scenario is the basis for comparison to determine any project impact. The second scenario is the 'with project' condition. The traffic volumes were obtained by adding trips generated by this project to the background conditions. Analysis results, when compared with the background 'no built' scenario, would show the project impacts. The third scenario is the cumulative conditions at 2028 which is the expected build-out date of this project. This scenario provides a snap shot of the study intersections' performance in the future when the whole master plan has been developed.

3.1 Approved Projects

A total of six approved projects in the vicinity of the study area have been included in this analysis as part of the background traffic:

1. 950 San Antonio Road Mixed-Use Development
2. 4390 and 4400 El Camino Real Condominium Development
3. 100 Mayfield Condominium Development
4. 45 Main Street Mixed-Use Development
5. 240 Third Street Mixed-Use Development
6. First Street USPS Site Redevelopment
7. Pilgrim Haven

Details for these projects relevant to this study are provided in Appendix B. Trips associated with these projects were added to the existing traffic volumes to determine the background traffic conditions.



MAP SOURCE: City of Los Altos

LOS ALTOS COMMUNITY CENTER

SURFACE PARKING AREA

#1 ACCESS

FIGURE 3-1

PROPOSED MASTER PLAN FOR PROJECT SITE

(N.T.S.)

3.2 Background Conditions

This scenario presents the 'background' or 'no build' conditions. Traffic counts for this scenario were obtained by adding trips from known approved projects presented above to existing counts and they are presented in Figure 3-2. This is the basis for comparison against the 'with project' condition later on, to determine if there would be any project impact. Table 3-1 presents the results for this scenario for all study intersections. The detailed analysis is presented in Appendix C.

It can be seen that the performance of all study intersections is within acceptable levels. All intersections would operate at LOS D or better during both AM and PM peak hours.

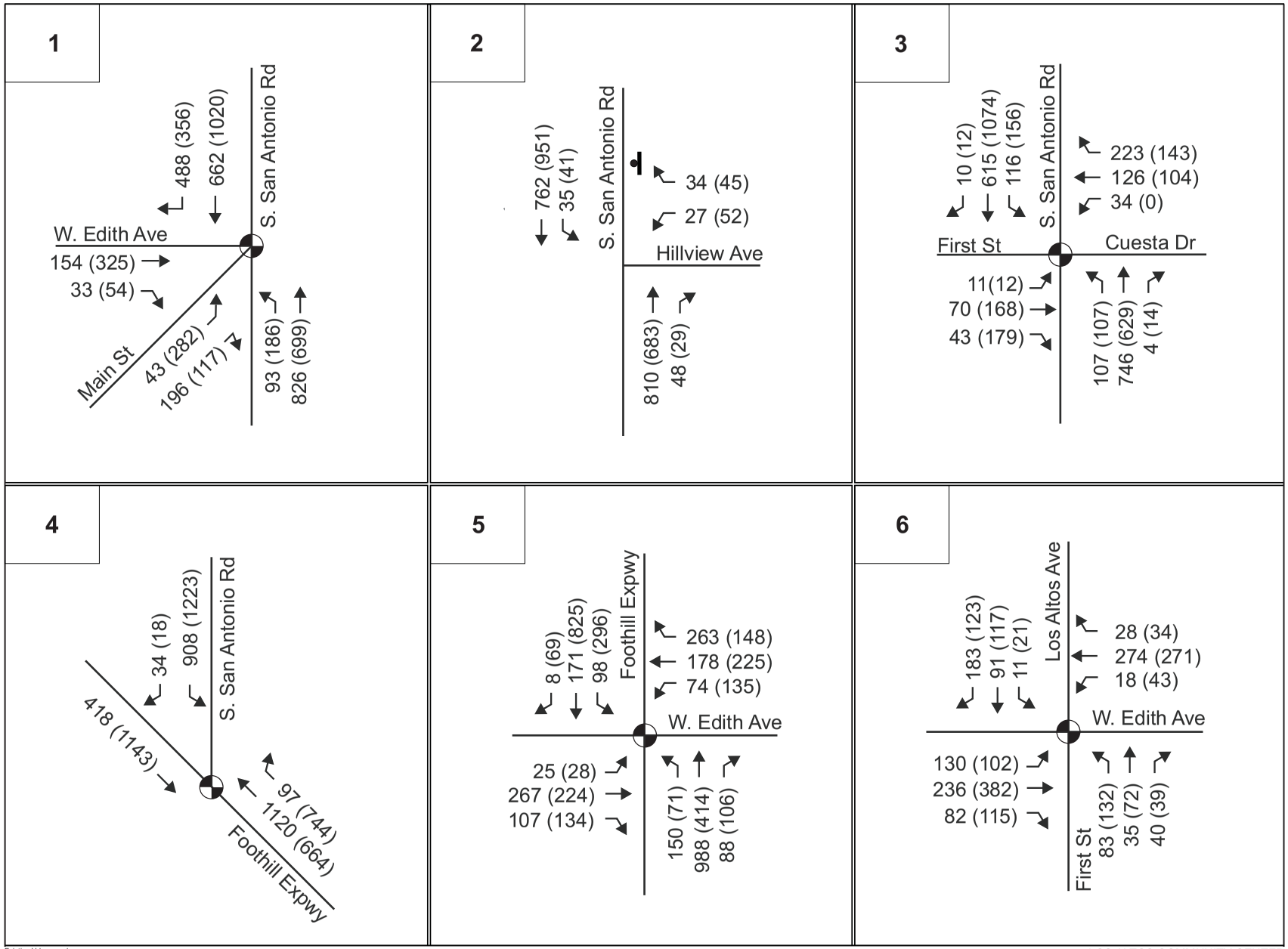
Table 3-1
Study Intersections LOS for Background Conditions

Intersection		Peak Hour	Background Condition			
			LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)
#1	San Antonio Road / West Edith Ave / Main Street	AM	C+	21.5	0.521	30.9
		PM	C	27.8	0.766	33.8
#2	San Antonio Road / Hillview Avenue (Unsignalized)	AM	C	23.0	0.176	23
		PM	D	28.8	0.324	28.8
#3	San Antonio Road / First Street / Cuesta Drive	AM	B	15.8	0.466	15
		PM	B	14.7	0.535	12.4
#4	San Antonio Road / Foothill Expressway*	AM	B	12.9	0.648	13.8
		PM	B-	19.2	0.904	25.9
#5	Foothill Expressway / West Edith Avenue	AM	C+	22.3	0.624	20.9
		PM	C+	22.2	0.591	23.5
#6	First Street / Los Altos Avenue / West Edith Avenue	AM	B-	18.0 [1]	0.386	18.4
		PM	C+	20.3	0.618	23.3

*CMP monitored intersection
Note 1: Due to rounding off error, the actual delay is higher than 18.0.
Source: AECOM May 2009

3.3 Trip Generation

This section looks at the trips generated by each new/redeveloped facility within the project site. Trip generation rates from the Institute of Transportation Engineers (ITE) *Trip Generation*, 8th Edition, are used in this study. Since there is no single trip rate for the entire complex, average trip rates for the individual facilities are used in this study.



Existing Volumes.cdr

LOS ALTOS COMMUNITY CENTER

Traffic Signal

Stop Sign

AM (PM) Peak Hour

Figure 3-2

BACKGROUND TRAFFIC VOLUMES

Hillview Community Center

- Existing size is 33,970 square feet
- Proposed to expand to 55,600 square feet
- To include Youth Center activities
- Facilities may be rented out on weekends
- No increase in staff

Under existing conditions, the Los Altos Youth Center (LAYC) is a separate building adjacent to the library. With this proposed redevelopment plan, it would be housed within the CC. While the activity level at the CC could increase due to the inclusion of the Youth Center, the LAYC activities are part of the existing project site already. No new vehicular trips would be generated by the relocation of the LAYC. Moreover, activities for the LAYC would generally take place outside the weekday peak hours. For the CC, no increase in staff is anticipated. As such, the redeveloped CC is not expected to generate additional trips during the AM and PM peak hours evaluated in this study.

City Hall

- Existing size is 9,882 square feet
- Proposed to expand to 19,880 square feet
- No increase in staff

The existing City Hall is getting obsolete and is insufficient to meet the level of service desired by the Los Altos residents. More space is needed to provide a more conducive working environment as well as additional storage. No increase in staff is anticipated and therefore, no additional trips are expected to be generated due to this building expansion.

Police Station

- Existing size is 11,641 square feet
- Proposed to expand to 18,815 square feet
- No increase in staff

This facility is considered part of civic service for the purpose of trip generation. It is assumed that the Police Station generates 25 percent of the City Hall trips using the ITE trip generation rates. The Police Station is getting obsolete and is insufficient to meet the level of service desired by the Los Altos residents. Additional space is needed to provide a more conducive working environment as well as additional storage. No increase in staff is anticipated and therefore, no new trips are expected to be generated due to this building expansion.

Library

- Existing size is 28,050 square feet
- Proposed to expand to 47,866 square feet
- Increase in staff

The proposed library expansion would contribute additional traffic to the study area due to an anticipated increase in staff and facility size. Some of this traffic would occur during the AM and PM peak hours.

Children's Play Area

- Existing size is 4,200 square feet
- Proposed to expand to 7,000 square feet

This facility would be expanded. This is a children's playground that is not expected to generate any vehicular trip. Residents living in the vicinity would most likely walk to the playground instead of drive. Moreover, most children would be at the playground outside the commute peak hours. As such, no additional trips will be generated.

Community Swimming Pool

- New facility to be added
- 39,860 square feet

This facility is a new addition to the project site. This facility is expected to generate new vehicular traffic in the study area during both the AM and PM peak hours according to a traffic impact analysis performed by Fehr and Peers, March 2004 for a different location. Relevant details from the TIA have been included in Appendix D.

Children's Corner Preschool

- Existing facility to be removed
- 3,500 square feet currently part of the CC

This preschool, with an average of 18 staff/teachers, has an enrolment of 209 students. The students are divided into two sessions; the Monday-Wednesday-Friday session of 111 students and the Tuesday-Thursday session of 98 students. This facility will be removed after the redevelopment. For the purpose of calculating the trip generation, the lower student number is used in order to be more conservative since trips would be removed from the project site.

Bus Barn Theater

The existing 99-seat theater would be demolished and replaced with a 200-seat theater. While additional trips would be generated, the new trips would not be made during the commute peak hours. Additional trips made due to the expected higher number of audience would occur mainly after the PM peak hour. Trips generated by employees or performance crew are expected to remain the same as existing. As such, the peak hour trip generation would not change due to the replacement.

Sports Fields

The existing soccer field, baseball field and bocce ball court would be replaced with newer facilities. These facilities are currently very well used by residents and are expected to continue to be popular in the future. While the layout of these facilities would be different; no additional trips would be expected from these facilities after the redevelopment, the trip distribution is expected to be same as existing.

Others

The existing Nuetra House, History House and Museum will remain at their existing locations with no change in size and activity level. The Senior Center, currently part of the Hillview CC, will continue to be part of it after the expansion. The existing sports fields will be replaced with newer facilities of the same area but different layout. Usage of these sports facilities is at capacity and is expected to be so in the future. No additional trips will be generated by these facilities. Table 3-2 provides a summary of the existing and future facilities and Table 3-3 shows the number of trips generated by each facility.

While there would not be changes to the number of trips generated by the Hillview CC, Police Station, City Hall and the theater, the trips would be re-distributed due to relocation of accesses. Details of this trip re-distribution will be discussed in the following section. In addition, it is assumed that the new Children's Play Area would not generate any vehicular trips.

Table 3-2
Summary of Facilities

	Size	Proposed Size	Additional Trips Generated
Expansion			
City Hall	9,882 sf	19,880	No
Police Station	11,641 sf	18,815	No
Library	28,050 sf	47,866	Yes
Hillview Community Center (CC)	33,970 sf	55,600	Yes (but not during peak hours)
Bus Barn Theater	100 seats	200 seats	Yes (but not during peak hours)
Children's Play Area	4,200 sf	7,000	No
New Addition			
Swim Center	N/A.	39,860	Yes
Retention			
Nuetra House	NA	Unchanged.	No
Los Altos Youth Center	5,930 sf	Part of the proposed CC	No
History House and Museum	NA	Unchanged.	No
Senior Center	Approx. 3,500 (part of existing CC)	Part of the proposed CC.	No
Replacement			
Sports Fields	NA	Unchanged.	No
Removal			
Children's Corner Pre-school	209 students (part of existing CC)	N/A	Reduction

sf= square feet

Table 3-3
Trip Generation for Facilities

Facility	Size	Daily Rate	Daily Trips	AM Peak Hour				PM Peak Hour			
				Rate	In	Out	Total	Rate	In	Out	Total
Library (expansion)	19,816 sf	56.24 /ksf	1114	1.04	14	6	20	7.30	70	76	146
Children's Play Area (expansion)	No vehicular trips generated										
Theater (expansion)[6]	100 seats	0.66 / seat	66	No peak hour trips generated							
Swim Center (new) [1]	39,860 sf	-	1419		59	65	124		74	42	116
Children's Corner Pre-school (remove)[5]	98 students	4.48 / student	(439)	0.8	(41)	(37)	(78)	0.82	(38)	(42)	(80)
Net Total			**2,160**		**32**	**34**	**66**		**106**	**76**	**182**
Redistributed trips											
Community Center	55,600 [2]	22.88 /ksf	697	1.62	30	19	49	1.45	16	28	44
City Hall (including Police Station)	38,695 [3]	86.16 /ksf [4]	851	7.35 [4]	61	11	72	1.51 [4]	5	10	15
Sports Fields	No change in trips										
Senior Center	No change in trips										
Nuetra House	No change in trips										
History House and	No change in trips										

Museum	
Los Altos Youth Center	No change in trips

Note:

1. Trips generated obtained from "*Transportation Impact Analysis for the Los Altos Community Pool*,"
2. New area for CC provided for information purpose only. Calculation of trips used existing area of 30,470 sf (exclude 3,500 sf for preschool) based on ITE Land Use 495.
3. New area for City Hall and Police Station provided for information purpose only. Calculation of trips used existing area for City Hall of 9,882 sf based on ITE Land Use 730.
4. Trip rates are 1.25 times of ITE *Trip Generation,* Land Use 730 to account for Police Station trips.
5. Existing trips calculated using ITE Land Use 565 based on number of students.
6. No daily trips for Theater based on ITE *Trip Generation,* Land Use 441. Use twice the parking rate of 0.33 from ITE *Parking Generation*, 3Rd Edition (ITE, 2004).

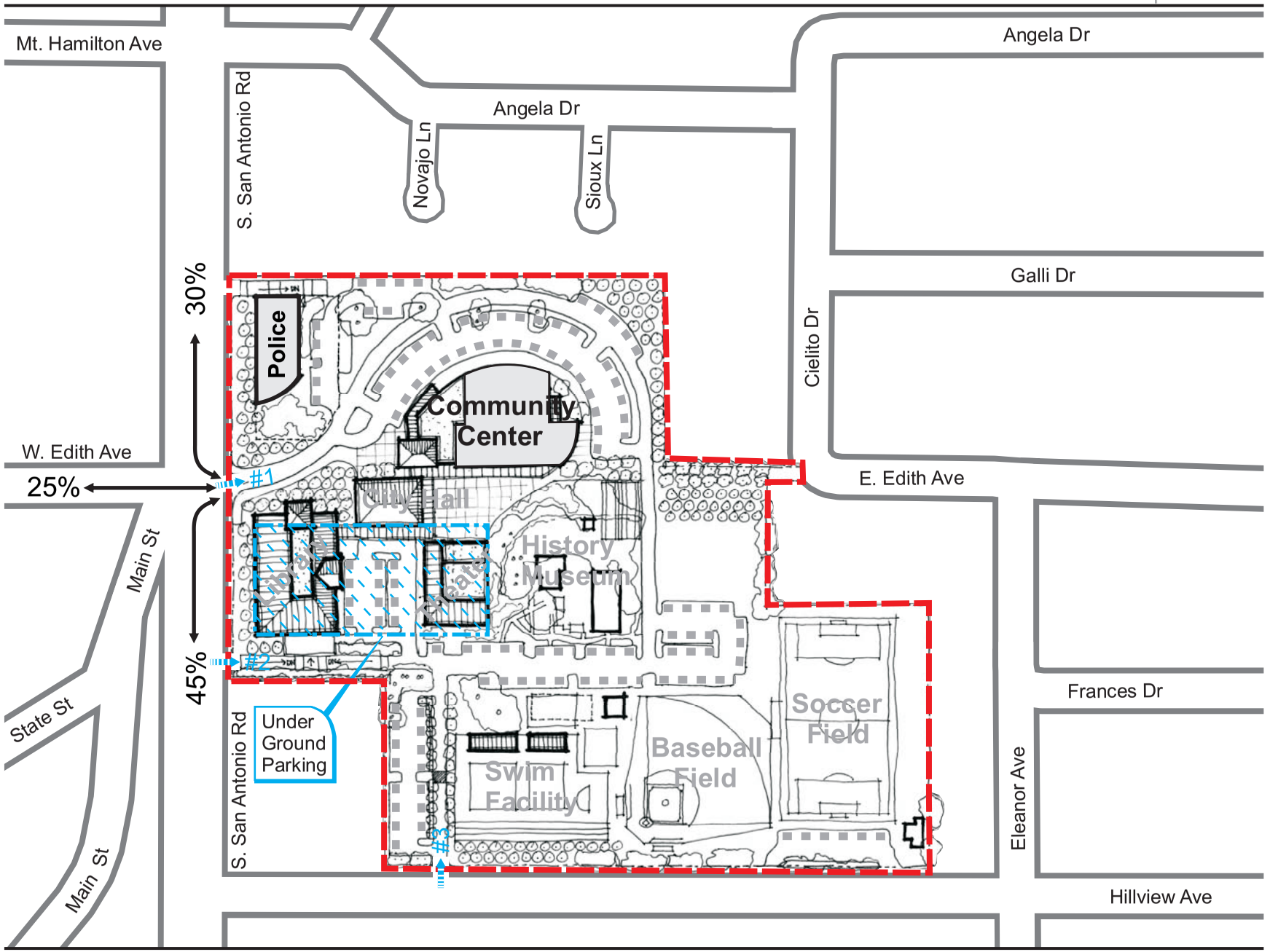
sf = square feet
ksf = 1000 square feet

3.4 Access Relocation and Circulation

This proposed project would allow the public to access the project site at three driveways; two along San Antonio Road and one along Hillview Avenue. The existing two accesses along Hillview Avenue would be reduced to one under the new site layout due to the relocation of the athletic fields and the construction of the swim facility. There would still be two accesses along San Antonio Road but the one currently being used for direct access to City Hall and the Police Station (south of Angela Drive) would be restricted to only authorized vehicles to the Police Station. Public access would be available via the intersection of San Antonio Road / W. Edith Avenue / Main Street, (Access 1) and the existing Library access, the unsignalized access along San Antonio Road, between W. Edith Avenue and Hillview Avenue (Access 2) which leads directly to the underground garage as well.

As a result, visitor trips generated by the Police Station have been re-assigned to the intersection of San Antonio Road / W. Edith Avenue / Main Street based on the percentages presented in Figure 3-3. Trips for the CC were also re-assigned (from the intersection of San Antonio Road / Hillview Avenue) to Access 1 due to relocation of the CC under the new proposal according to the percentages presented in Figure 3-3. While some City Hall trips generated by the public are expected to make use of Access 1, most employee trips would use Access 2 for access into the underground garage. As such, City Hall trips have to be re-assigned to Access 1 and 2 according to the percentages presented in Figure 3-4. Most Llibrary trips would continue to use Access 2 as the current conditions. Theater trips would be redistributed to use Access 2 as the main access point to the project site. The distribution percentages for Library and Theater are presented in Figure 3-5.

In this study, it is assumed that approximately half the visitors to the new swimming pool would primarily use the access along Hillview Avenue (Access 3). The availability of parkingspaces west and north of the new swimming pool would draw drivers coming from Hillview Avenue to use this access. The other half of



MAP SOURCE: City of Los Altos

LOS ALTOS COMMUNITY CENTER

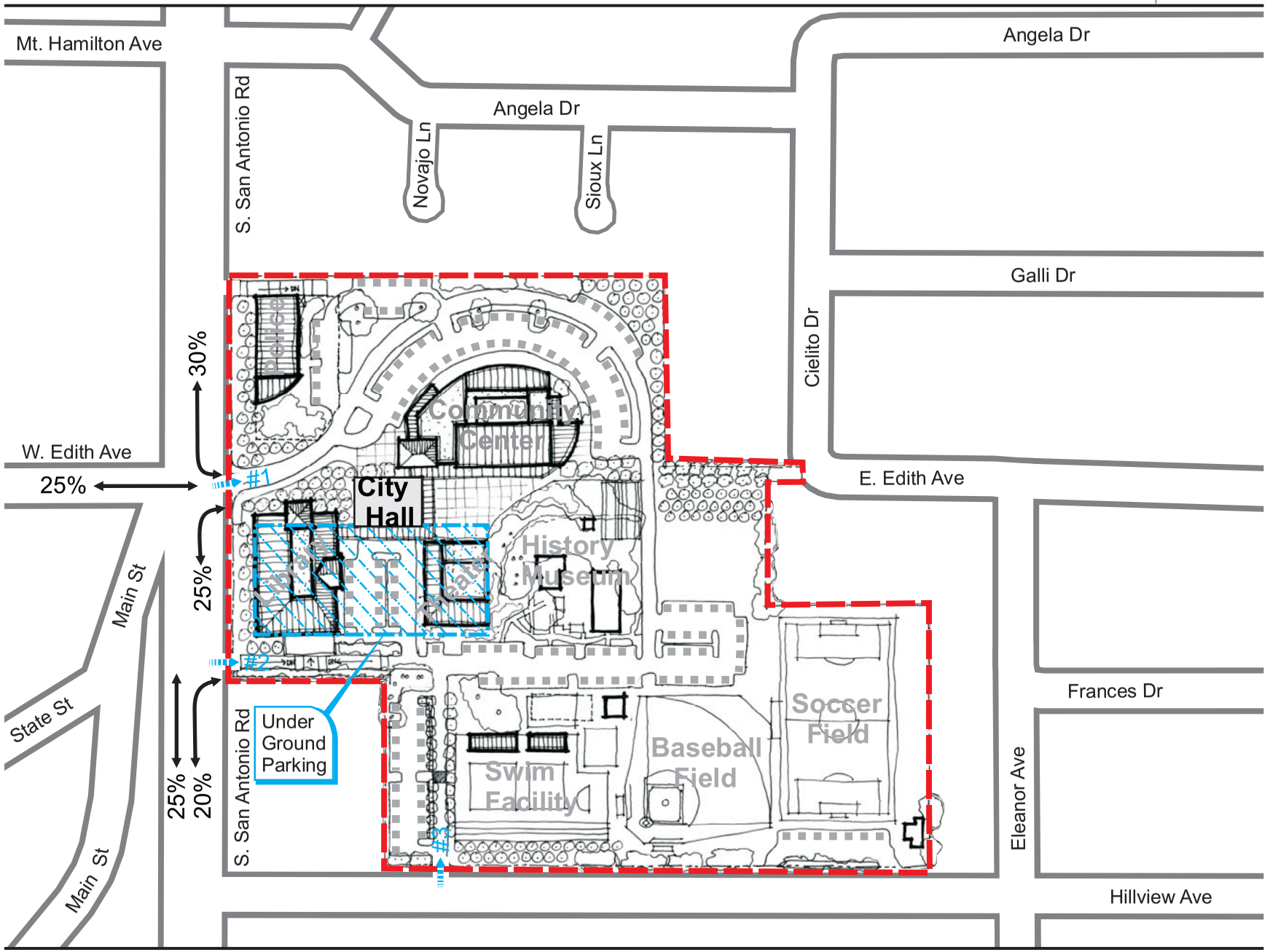
SURFACE PARKING AREA

#1 ACCESS

FIGURE 3-3

POLICE AND COMMUNITY CENTER SITE ACCESS DISTRIBUTION

(N.T.S.)



MAP SOURCE: City of Los Altos

LOS ALTOS COMMUNITY CENTER

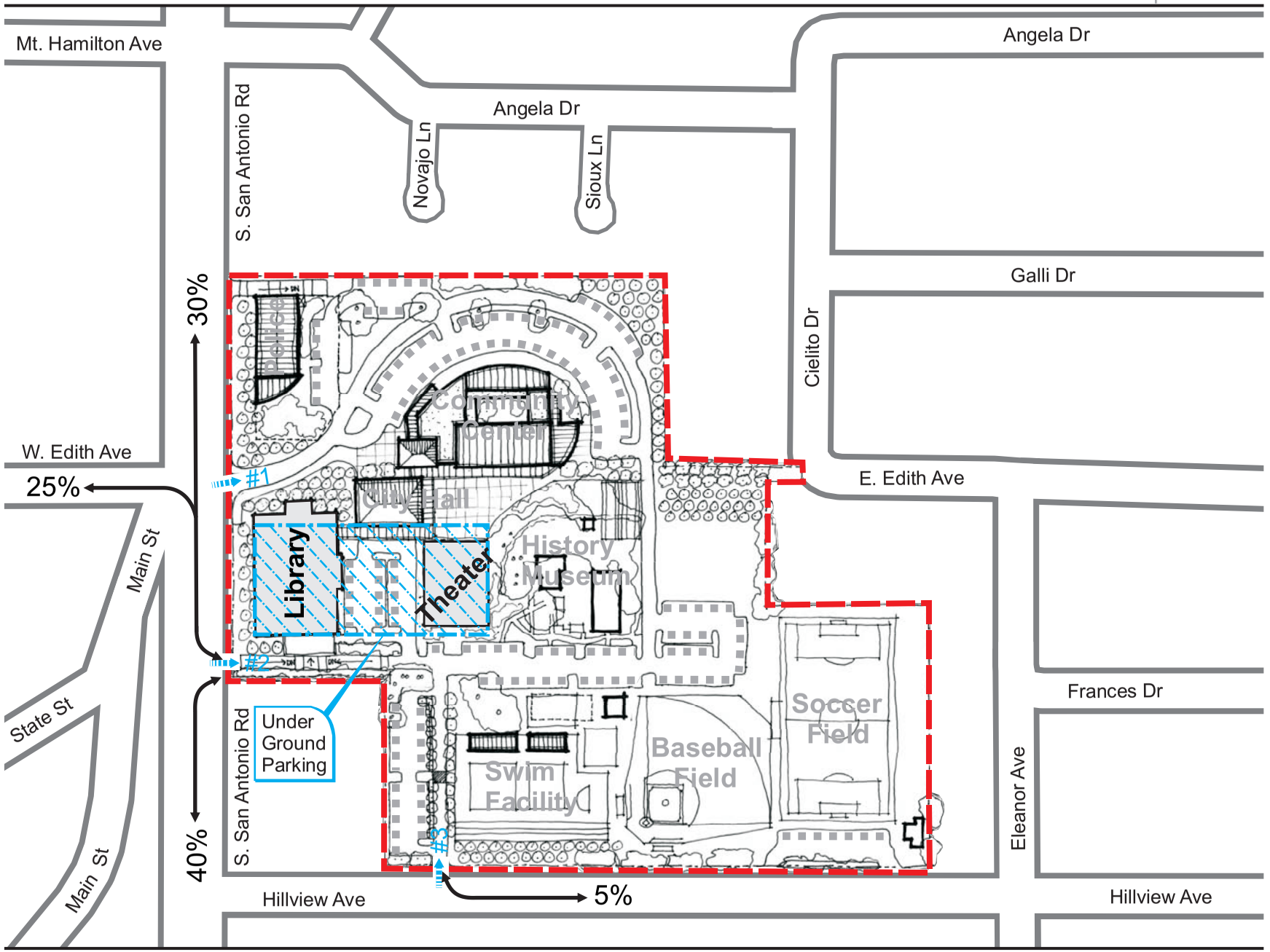
SURFACE PARKING AREA

#1 ACCESS

FIGURE 3-4

CITY HALL SITE ACCESS DISTRIBUTION

(N.T.S.)



MAP SOURCE: City of Los Altos

LOS ALTOS COMMUNITY CENTER

SURFACE PARKING AREA

#1 ACCESS

FIGURE 3-5

LIBRARY AND THEATER SITE ACCESS DISTRIBUTION

(N.T.S.)

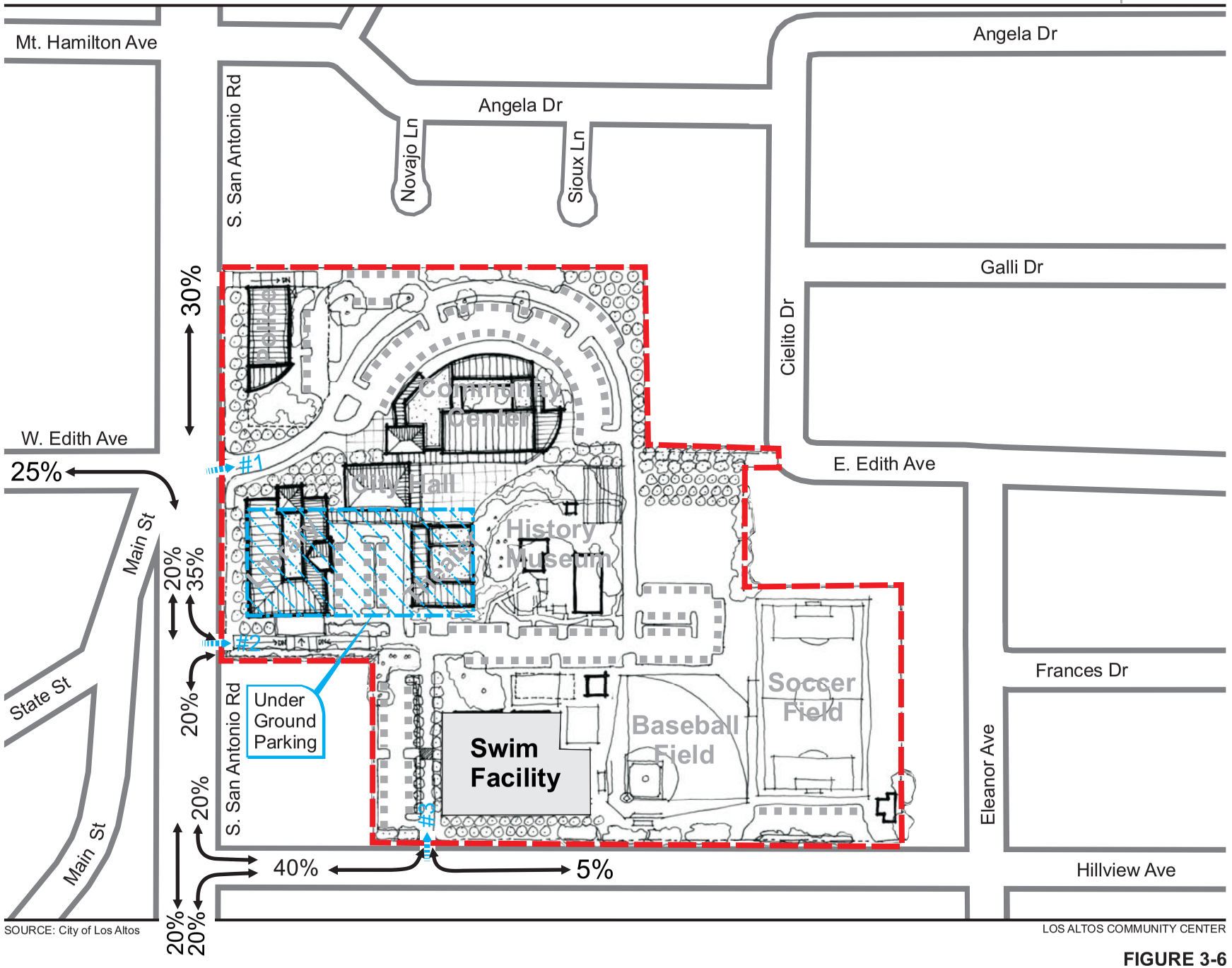


FIGURE 3-6

SWIM FACILITY SITE ACCESS DISTRIBUTION

(N.T.S.)

the swim center visitors would use San Antonio Road. The distribution percentages are presented in Figure 3-6.

With Access 1 at the intersection of San Antonio Road / W. Edith Avenue / Main Street, geometry of eastbound Edith Avenue would need to be modified to accommodate the through movement into the project site. The existing eastbound left-turn lane would remain while the eastbound right-turn lane is changed to a shared right/through. Eastbound left-turn travel lane volumes are significantly higher than right-turn volumes under all scenarios. For southbound San Antonio Road, a left-turn lane is needed to accommodate the southbound left-turns into the CC. There is a median island along San Antonio Road that could be reconfigured to provide this left-turn lane. The proposed geometry is presented in Figure 3-7. Geometry for all other study intersections remains unchanged.

Drivers entering the project site from Access 1 can primarily access the Police Station and the Community Center. Access 2 and Access 3 would allow drivers to get to the Library, Swim Center, Theater and the History / Museum House. Access 2 is the primary access to the proposed underground parking garage. However, as all the parking areas within the project site are connected via the internal road network, drivers have the flexibility to use all three accesses.

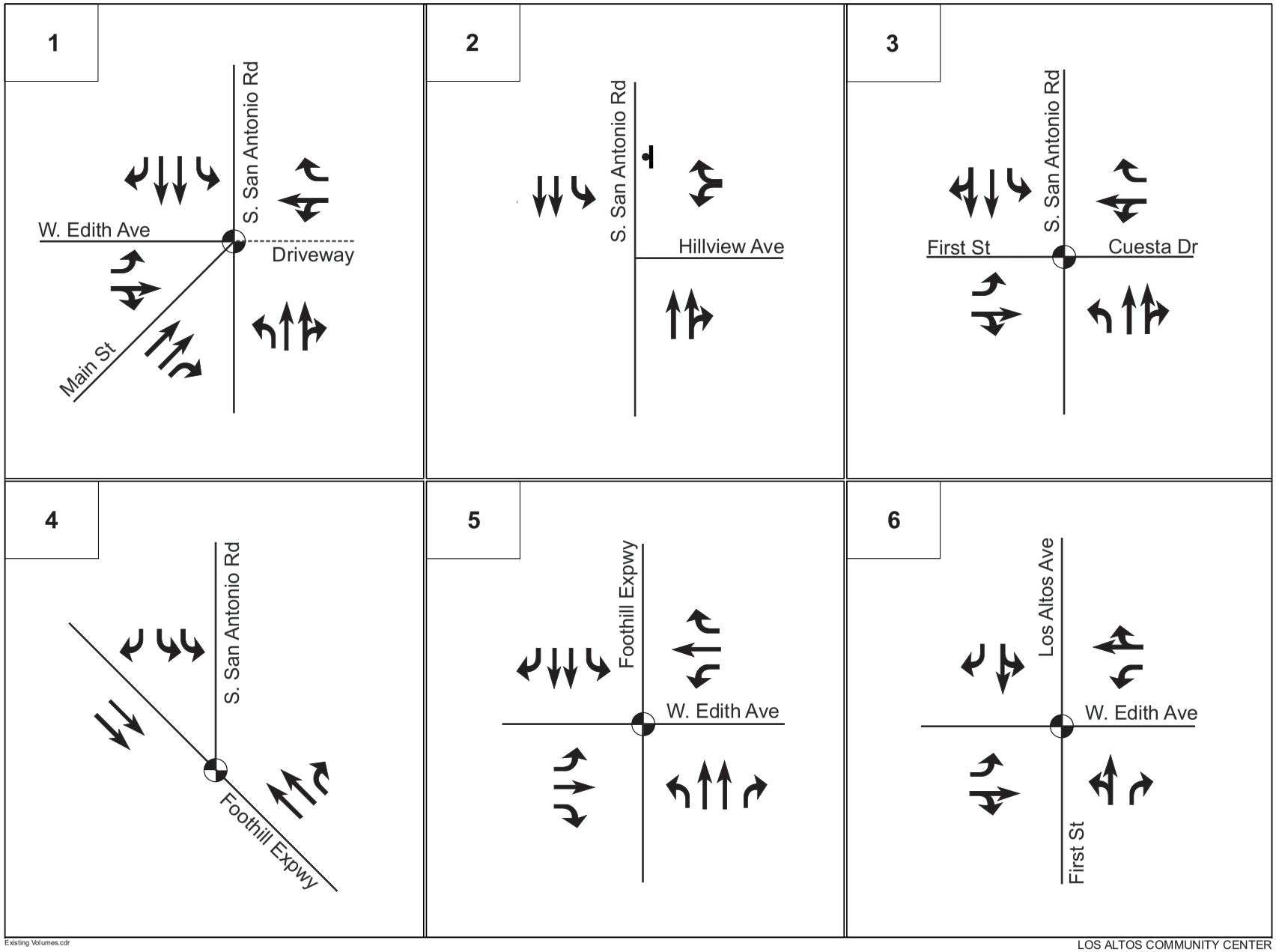
It is assumed that the parking areas would be designed according to standards of City of Los Altos with two-directional parking aisles and dimensions meeting the City's requirements. Based on the parking area layout, there would be sufficient space for maneuvering and all accesses would have sufficient queuing space for cars entering and exiting the project site. In addition, it is assumed that all movements are allowed at the underground parking garage access such that drivers can use Access 2 or go to other parts of the project site.

3.5 Trip Distribution and Assignment

Trips generated by this project were distributed according to the percentages presented in Figure 3-8 within the study area. They were then assigned to each study intersection based on the direction of travel. In particular, the intersection of San Antonio Road / West Edith Ave / Main Street and San Antonio Road / Hillview Avenue would have to consider trips generated by the different facilities as discussed above. The net project trips and the redistributed facility trips at each study intersections are presented in Figure 3-9.

3.6 Background With Project Analysis

Traffic volumes for the 'with project' scenario are obtained by adding trips generated by the proposed project to the background 'no build' conditions. Figure 3-10 presents the 'with project' volumes. The LOS for all study intersections based on these volumes are tabulated and compared against the 'background' scenario discussed in Section 3.2. Table 3-4 presents the comparison results.



Existing Volumes.cdr

LOS ALTOS COMMUNITY CENTER

Traffic Signal

Stop Sign

Figure 3-7

FUTURE STUDY INTERSECTION GEOMETRY

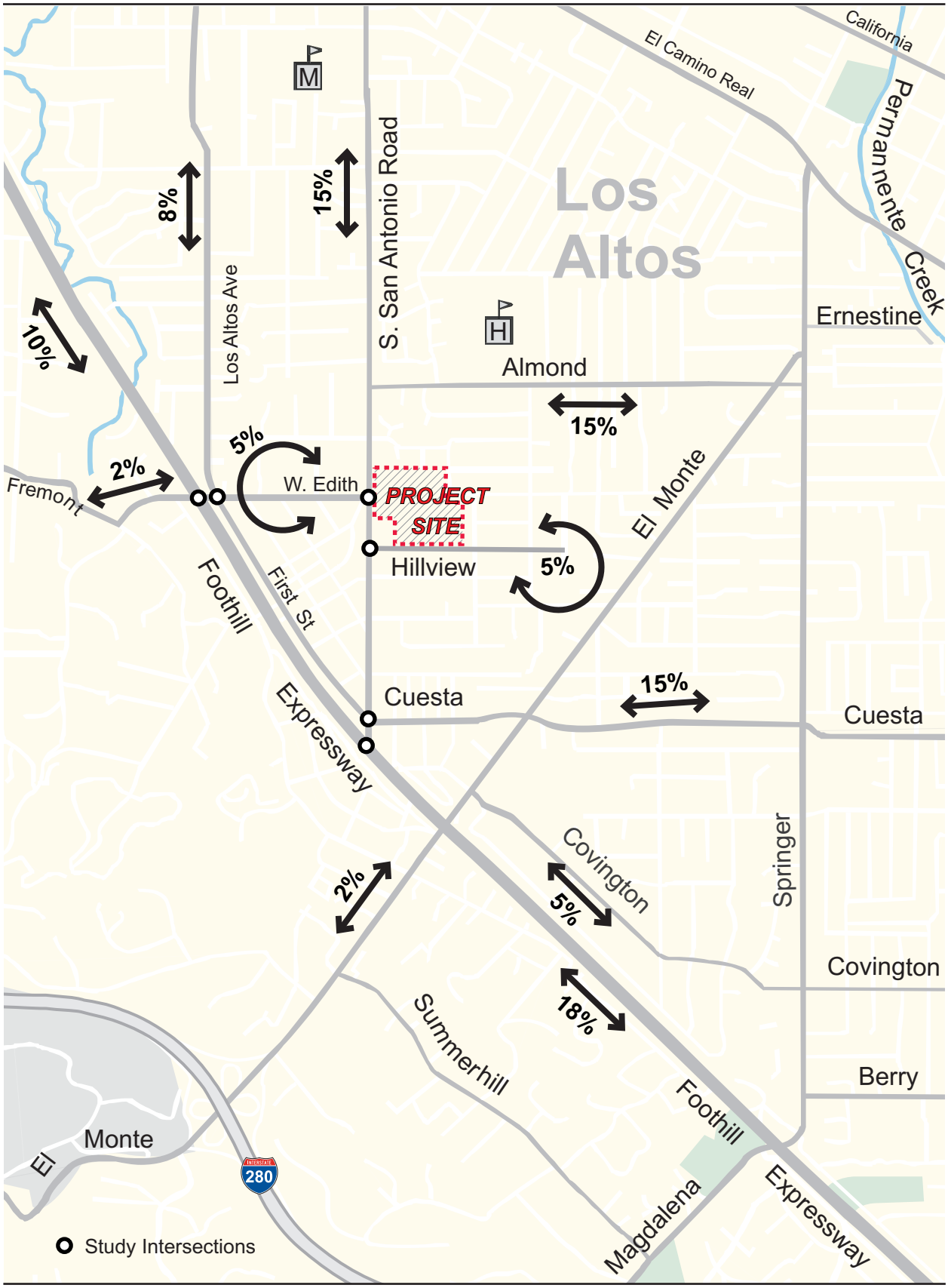


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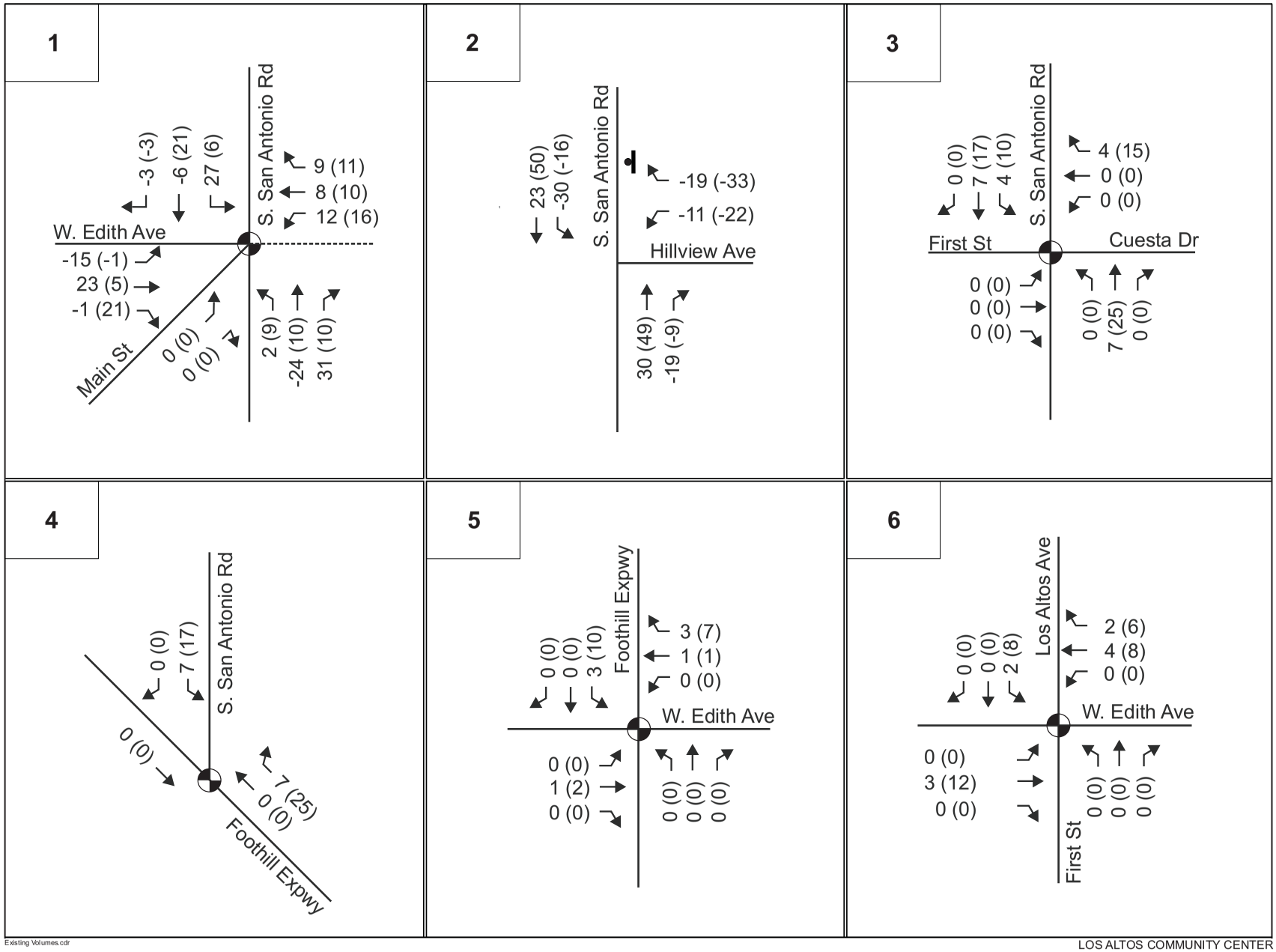
Figure 3-8

PROJECT TRIP DISTRIBUTION



Existing Volumes.cdr

LOS ALTOS COMMUNITY CENTER

Traffic Signal

Stop Sign

AM (PM) Peak Hour

Figure 3-9

PROJECT ONLY TRAFFIC VOLUMES

As discussed in the earlier section, the geometry for the intersection of San Antonio Road / W. Edith Avenue / Main Street under this 'with project' scenario would be revised. It can be seen that this intersection would operate within acceptable levels with the new proposed layout.

Using the criteria set-out in Section 2.1.2, all intersections are expected to operate within the acceptable levels. No intersections would be affected by the proposed redevelopment. All intersections under the 'with project' scenario would operate at LOS D or better.

It is noted that Access 2 would operate at LOS C during the AM peak hour but at LOS E in the PM peak hour. If the intersection of San Antonio Road / Hillview Avenue is signalized in the future, there would be more gaps along San Antonio Road for drivers turning in or out of Access 2, thus reducing the delay. Otherwise, the access could be changed to right-out only. Drivers going southbound on San Antonio can still turn left into the project site but drivers going out can only make right-turn. This change would improve the LOS of Access 2 from E to B during the PM peak hours. Details are provided in the Appendix. Drivers can either make a U-turn at the intersection of San Antonio Road / West Edith Ave / Main Street or make left-turn at this intersection via the internal network of the project site.

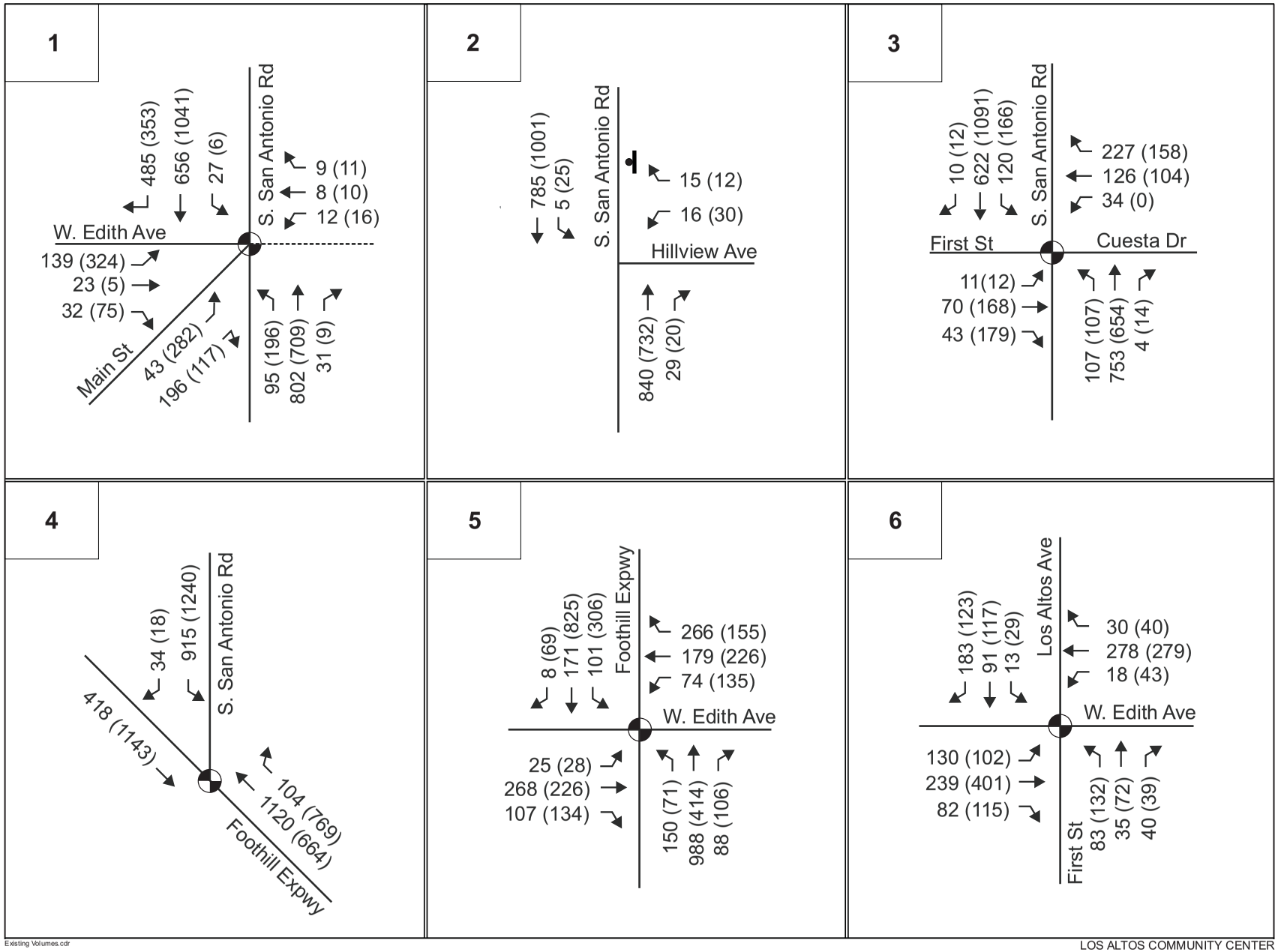
Table 3-4
Comparison of LOS for 'With Project' Conditions

	Intersection	Peak Hour	Background Condition				Background + Project Condition			
			LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)	LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)
#1	San Antonio Road / West Edith Ave / Main Street	AM	C+	21.5	0.521	30.9	C	28.1	0.52	33.6
		PM	C	27.8	0.766	33.8	D+	38.9	0.783	44.6
#2	San Antonio Road / Hillview Avenue (Unsignalized)	AM	C	23.0	0.18	23	C	21.3	0.097	21.3
		PM	D	28.8	0.32	28.8	D	28.3	0.195	28.3
#3	San Antonio Road / First Street / Cuesta Drive	AM	B	15.8	0.466	15	B-	18.2	0.582	17.6
		PM	B	14.7	0.535	12.4	B	15.8	0.594	14.7
#4	San Antonio Road / Foothill Expressway*	AM	B	12.9	0.648	13.8	B	13	0.65	13.8
		PM	B-	19.2	0.904	25.9	C+	20.6	0.926	28.7
#5	Foothill Expressway / West Edith Avenue	AM	C+	22.3	0.624	20.9	C+	22.4	0.626	20.9
		PM	C+	22.2	0.591	23.5	C+	22.3	0.6	23.7
#6	First Street / Los Altos Avenue / West Edith Avenue	AM	B-	18.0 [1]	0.386	18.4	B-	18.1	0.39	18.4
		PM	C+	20.3	0.618	23.3	C+	20.6	0.632	24 *

CMP monitored intersection
Note 1: Due to rounding off error, the actual delay is higher than 18.0.
Source: AECOM May 2009

3.7 2028 Cumulative Conditions Analysis

It is envisaged that this proposed master plan could be fully completed by the year 2028 if funding is available. As such, the LOS of all study intersections at



Existing Volumes.cdr

LOS ALTOS COMMUNITY CENTER

Traffic Signal

Stop Sign

AM (PM) Peak Hour

Figure 3-10

BACKGROUND PLUS PROJECT TRAFFIC VOLUMES

this build-out year, including trips generated by the project, was calculated. This scenario is defined as the 'cumulative' conditions.

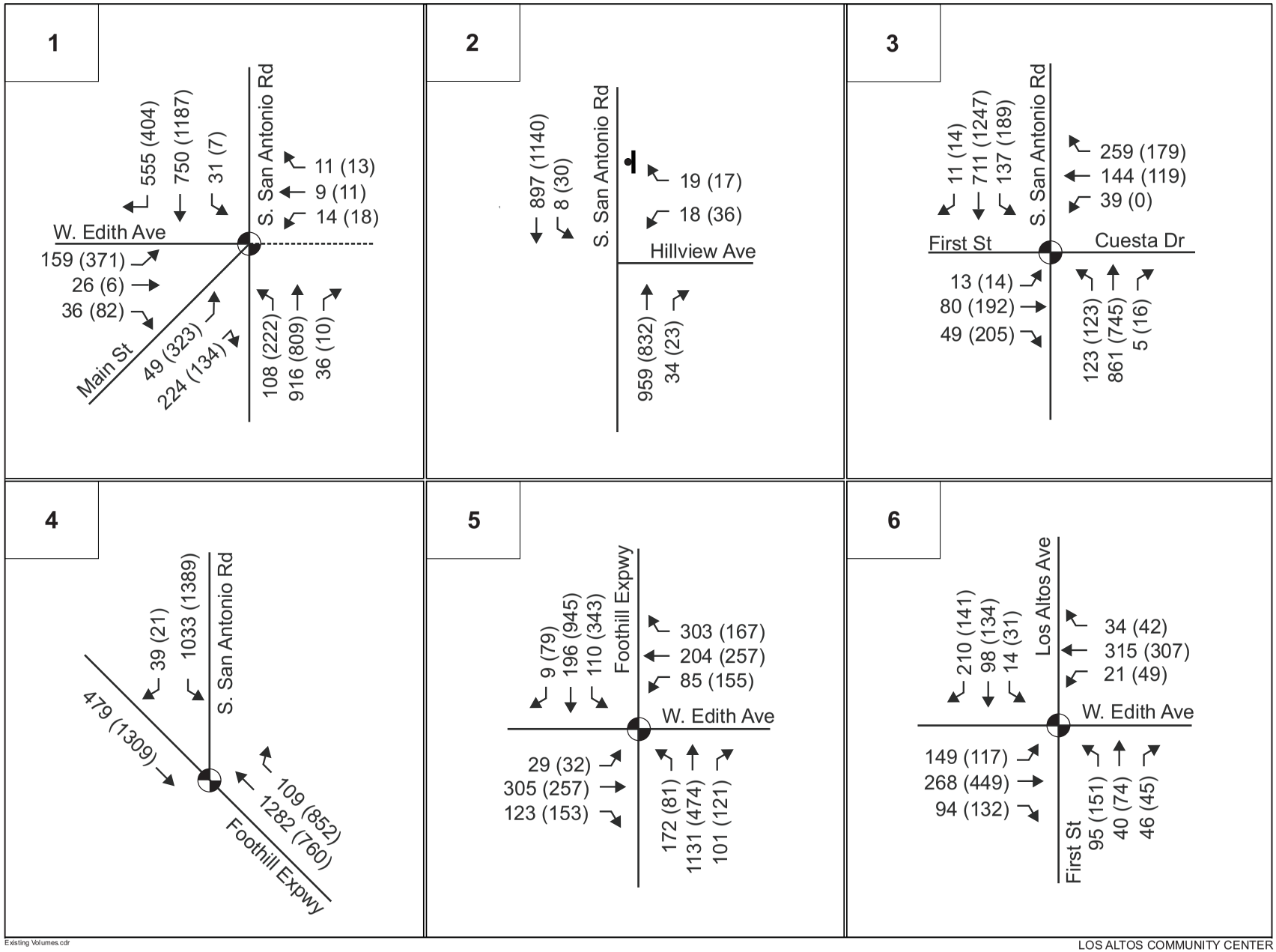
The total volumes for 2028 were obtained by adding the net project volumes to the forecasted background volumes for 2028. The 2028 forecasted 'no project' background volumes were calculated by applying a growth rate of one percent per year to the current background volumes up to 2019 and one-half percent per year for the remaining nine years. These growth rates were used in the *City of Los Altos Downtown Wide Traffic and Parking Impact Analysis* (AECOM, January 2008). As a result, the total growth from 2009 to 2028 is approximately equivalent to 14.5%.

The cumulative total traffic volumes are shown in Figure 3-11. Table 3-5 presents the analysis results. It can be seen that all signalized intersections would operate at LOS D or better. The unsignalized intersection of San Antonio Road / Hillview Avenue is expected to operate at LOS E the PM peak hour. Analysis details can be found in Appendix E

Table 3-5
Study Intersections LOS for Cumulative Conditions

Intersection		Peak Hour	Cumulative Condition			
			LOS	Avg Del (sec)	Crit V/C	Avg Crit Del (sec)
#1	San Antonio Road / West Edith Ave / Main Street	AM	C-	33.3	0.741	46.9
		PM	D-	50.7	0.879	60.4
#2	San Antonio Road / Hillview Avenue (Unsignalized)	AM	D	26.4	0.144	26.4
		PM	E	39.4	0.310	39.4
#3	San Antonio Road / First Street / Cuesta Drive	AM	B-	19.3	0.665	19.3
		PM	B	16.7	0.678	16.3
#4	San Antonio Road / Foothill Expressway*	AM	B	14.3	0.739	15.5
		PM	C-	33.1	1.031	52
#5	Foothill Expressway / West Edith Avenue	AM	C	26.2	0.712	24.1
		PM	C	24	0.681	26.1
#6	First Street / Los Altos Avenue / West Edith Avenue	AM	B-	18.5	0.438	18.9
		PM	C+	22.8	0.709	28.6

*CMP monitored intersection
Source: AECOM May 2009



Existing Volumes.cdr

LOS ALTOS COMMUNITY CENTER

Traffic Signal

Stop Sign

AM (PM) Peak Hour

Figure 3-11

2028 CUMULATIVE TRAFFIC VOLUMES

The actual delay experienced by a driver on Hillview Avenue at the intersection with San Antonio Road during the PM peak hour is likely to be less than the calculated 39.4 seconds. Traffic signals along San Antonio Road, north and south of Hillview Avenue, would create gaps between platoons of vehicles allowing drivers on Hillview Avenue to enter San Antonio Road. The software used to analyze the intersection (TRAFFIX) assumes that the traffic on San Antonio Road uniformly travels on the roadway resulting in few or no gaps in traffic. It does not take into account the actual gaps in traffic created by the traffic signals on San Antonio Road. Further calculation revealed that a signal warrant is not met at the unsignalized intersection (Appendix F). As such, the project does not impact this intersection significantly.

A potential improvement that can be considered at this intersection is restricting the left-turn movement from Hillview Avenue to San Antonio Road. Drivers could still turn left into Hillview Avenue from San Antonio Road. However, those planning to go south on San Antonio Road would need to make a U-turn at the intersection of San Antonio Road / West Edith Ave / Main Street. Calculations show that the San Antonio Road / West Edith Ave / Main Street intersection can accommodate the additional U-turning vehicles with no significant impact under the cumulative conditions. In order to minimize inconvenience to the residents living along Hillview Avenue, the left-turn would be limited to only the PM peak period on weekdays. Residents could still enjoy the convenience of turning left onto San Antonio Road during off-peak hours when traffic along San Antonio Road is lighter and more gaps would be available.

It is noted that Access 2 would operate at LOS D during the AM peak hour but at LOS F in the PM peak hour. If the intersection of San Antonio Road / Hillview Avenue is signalized in the future, there would be more gaps along San Antonio Road for drivers turning in or out of Access 2, thus reducing the delay. Otherwise, the access can be changed to right-out only. Driver going southbound on San Antonio could still turn left into the project site but drivers going out could only make right-turn. This change would improve the LOS of Access 2 from F to B during the PM peak hours. Details are provided in the Appendix.

3.8 Residential Roadway Analysis

The background ‘no project’ ADT (including approved projects) along Hillview Avenue is 1,572 vehicles per day. The TIRE Index for such a roadway is 3.2. Adding the net trips from this project as well as redistributing the trips due to the CC relocation, the ‘with project’ ADT is along Hillview Avenue, east of Access 3, is 623 vehicular trips per day under Background Conditions. There is actually a reduction in the number of trips as a result of removing the preschool, relocating the CC and moving the access closer to San Antonio Road as indicated in Figure 3-1. As a result, the ADT at the count location is expected to be lower in the future. Appendix G presents the ADT calculations along with ADT for San Antonio Road for informational purposes. As such, Hillview Avenue would not be

significantly impacted by this project. The TIRE Index for Hillview Avenue would change to 2.8 with this project.

The ADT of Hillview Avenue under the cumulative conditions in 2028 is 755 vehicles which is still less than the existing traffic volumes. Therefore, this project would have no impact under the cumulative conditions.

3.9 Transit Analysis

While the revamped library, community center, new swim center, etc. are expected to draw more visitors to the project site, the increase is not expected to cause an adverse impact on the transit services serving this area. Based on observation of the current transit conditions, the two bus stops along San Antonio Road are sufficient to serve the entire project site in the future.

3.10 Pedestrian and Bicycle Analysis

One of the key elements for this master plan is to improve the non-motorized connection of this project site with the Los Altos Downtown. This project would provide a more conducive walking and biking environment between the downtown area and the CC for residents who choose not to drive. This improved environment is expected to encourage more residents to use a non-motorized mode of transportation. In addition, it is expected that non-motorized travel would increase in the future due to the expanded facilities attracting more residents.

Existing pedestrian facilities of crosswalks (both signalized and unsignalized) and sidewalks are expected to meet the increased demand of the future. Similarly, the existing bicycle facility network serving the city is expected to accommodate the higher demand in the future.

3.11 Parking Analysis

New parking spaces will be provided for the project site as part of the redevelopment. The details are contained in Appendix H. The parking demand calculated based on the City's parking requirements is 565 spaces. It is to note that based on the TIA for the swim center (presented in Appendix D), 84 spaces would be needed. The total required parking would be 569 spaces. The number of spaces proposed under this master plan is 609 spaces; more than the calculated number of spaces. Sixty-six (66) of the proposed spaces are secured parking below grade for the new Police Station. This parking area is separate from the underground parking garage accessible by the public. It is meant for police cars and public safety staff only. Visitors to the Police Station can park at the public accessible underground garage or any of the surface parking areas. The proposed public underground garage would provide 170 spaces and the remaining 373 would be surface parking distributed among the different parking area within the project site. Up to 30 on-street parking spaces are available along Hillview Avenue. As such, the number of parking spaces provided is higher than

the calculated demand. It is considered that there would be adequate parking available to users of the different facilities within the project site.

4.0 CONCLUSION

The proposed Master Plan for the City of Los Altos Community Center aims to replace several existing facilities like the Police Station, City Hall and the Bus Barn Theater with new, modern buildings that would meet the City's future needs. Other facilities like the community center and library would be expanded to accommodate the increased demand of the residents and a new swim center will be added to the site. In addition, a new underground parking garage has been proposed to replace some surface parking areas that would give way to more open spaces. Existing accesses of the project site would also be relocated. As such, traffic conditions in the study area are expected to change.

This proposed Master Plan is not expected to impact the transit, pedestrian and bicycle facilities currently available in the project site vicinity. These facilities are expected to meet the expanded needs in the future. The 'with project' daily traffic volume along Hillview Avenue is expected to lower the TIRE Index and therefore has no significant impact on Hillview Avenue.

Of the six study intersections, only the unsignalized intersection of San Antonio Road / Hillview Avenue would operate at LOS E under PM peak of the cumulative scenario. All signalized intersections would operate at LOS D or better in all scenario. As a signal warrant is not met at the unsignalized intersection, it is not considered significantly impacted by the project. Moreover, the actual delay experienced by drivers waiting to turn at this intersection may be less than the calculated values. If improvement to the intersection is being considered. restricting the left-turn movement from Hillview Avenue would be an option. The current Library access, Access 2, would be the primary access to the proposed underground parking garage and is expected to operate at LOS F during the PM peak hour. Similarly, restricting the left-turn movement from Access 2 would improve this intersection's performance. Internal circulation and parking provision of this project are found to meet the needs of the complex.

MEMORANDUM

Date: October 17, 2003

To: James Walgren, City of Los Altos
Demetri Loukas, David J Powers Associates
Kamrin Knight-Desmond, SPLASH

From: Sohrab Rashid, P.E.
Jason Nesdahl

Subject: Los Altos Aquatic Center Trip Generation Estimates

1035-619

Fehr & Peers Associates, Inc. has estimated trip generation for the Los Altos Aquatic Center project based on surveys of Eagle Pool in Mountain View, California and schedules provided by Swimmers Promoting Los Altos Aquatics Safety and Health (SPLASH). This memorandum presents these estimates and requests comments and/or verification from for the City of Los Altos and SPLASH in the use of these estimates for the traffic analysis. The proposed project will construct a swim center that will contain two swimming pools and other related facilities.

Trip Generation Surveys

Peak-hour trip generation surveys were conducted at the Eagle Pool facility in the City of Mountain View, California to determine the current trip generation rates of this facility. Personal interviews were conducted with people exiting the Eagle Pool facility on August 14, 2003 from 7:00 am to 9:00 am and 4:00 pm to 6:00 pm. Surveys were conducted at this time to obtain trip generation information on swimming activities during the peak Summer months.

During the AM peak hours, the only activities that occurred at Eagle Pool were two Masters swim sessions. Based on information provided by the Masters coach, there were approximately 50 total Master's swimmers at these two sessions on this morning. The results of the survey show that the Master's swimmers generated 38 trips (14 inbound/24 outbound) during the AM peak hour. Approximately five percent of the participants surveyed used an alternative mode of travel (i.e. walk, bicycle, etc.).

During the PM peak hour, four 30-minute sessions of swimming lessons were the only events that occurred at Eagle Pool. It was estimated from the surveys that approximately 110 children participated in the four sessions. The results of these surveys show that 91 trips (51 inbound/40 outbound) were generated during the PM peak hour. Less than five percent of the participants surveyed used an alternative mode of travel. It was also calculated that approximately 25 percent of the vehicles carried more than one participant to the pool resulting in an average participants/vehicle ratio of 1.22.

Trip Generation Assumptions

Schedules for the Summer peak and the Non-Summer periods were provided (by SPLASH) in the attached spreadsheets, showing a schedule for the proposed pool facility uses broken down by time as well as the anticipated number of participants. Further information is needed concerning the dates of the Summer and Non-Summer months and the possible overlapping of the two. Conservative assumptions used in calculating trip generation estimates were based on discussions with Kamrin-Knight Desmond of SPLASH (e.g. the maximum number of a range of participants was used to calculate trip generation). Specific assumptions for each class are presented below.

Masters Swimming

- 5% arrive/depart by non-vehicular means year round

Youth Swim Team

- A designated percentage, based on the length of the program and age group, was assumed to be dropped off and picked up from the program. Group A was assumed to have 25% participants driving and staying the length of the program and 75% picking up and dropping off at the beginning and end of program. Group B has a 50/50 percent split and Group C has 75% staying at the class and 25% picking up and dropping off
- For classes that are only an hour in length, it was assumed that 100% of the vehicles stayed during the program
- 25% of participants carpool
- During the Summer, dry land time is assumed to be 30 minutes for programs in competition pool. Dry land time is time before actual program starts to prepare for pool time (changing, stretching, etc.)
- During Non-Summer schedule, dry land time assumed to be 45 minutes before and after in competition pool

Lap Swim

- 2 persons per lane
- Average swim time 45 minutes
- 100% of participants drive single occupant vehicles

Recreational Swim

- 20 people in pool for average of one hour during Summer schedule (A range of 2 to 20 people estimated to be in pool at any one time. The maximum number taken as a conservative estimate.)
- 15 people in pool for average of one hour during Non-Summer schedule
- 10% travel by non-vehicular mode
- 25% of participants carpool

Water Fitness/Weekly Rental of Facility

- 100% of designated participants drive to class in single occupant vehicle

Lessons

- 100% of designated participants at each 30 minute class
- 100% of drivers stay at pool the duration of class

- 25% of participants carpool

Conclusion

Based on the calculations using the above assumptions and the schedules provided it is estimated that the proposed swim facility would generate 1,935 daily trips with 75 AM peak-hour trips (26 inbound/49 outbound) and 188 PM peak-hour trips (124 inbound/64 outbound) during the Summer period. The proposed project is estimated to generate 1,419 daily trips with 124 AM peak-hour trips (59 inbound/65 outbound) and 116 PM peak-hour trips (74 inbound/42 outbound) during Non-Summer months. These trip generation estimates provide a conservative estimate of project-generated traffic both both Summer and Non-Summer time periods. We appreciate any comments or questions to further refine these estimates.

MEMORANDUM

Date: December 11, 2003

To: James Walgren, City of Los Altos
Demetri Loukas, David J Powers Associates

From: Sohrab Rashid, P.E.
Jason Nesdahl

Subject: Los Altos Aquatic Center Roadway Volumes

1035-619

Fehr & Peers Associates, Inc. is conducting a transportation impact analysis for the Los Altos Aquatic Center. Part of this analysis includes evaluation of the project-generated daily traffic to adjacent roadway segments. This memorandum presents the existing daily roadway volumes, the estimated volumes with the proposed project, and volumes on other similar roadways for comparison purposes. The proposed project will construct a swim center that will contain two swimming pools and other related facilities.

Roadway Classification

The City of Los Altos' General Plan has a roadway classification system that designates City-maintained roadways as arterials, local collectors, and collectors. All other undesignated roadways are considered to be local streets. Arterial roadways are major streets that primarily serve through traffic and provide access to abutting properties as a secondary function. Arterials are generally designed with two to six travel lanes and major intersections are signalized. Collectors are streets that provide access and traffic circulation within residential and non-residential (e.g., commercial and industrial) areas. They connect local streets to arterials and are typically designed with two travel lanes that may accommodate on-street parking. In some cases, they will provide access to abutting properties. A local collector is a street that distributes traffic within a neighborhood or similar adjacent neighborhoods, but is not intended for use as a through street or link between higher capacity facilities such as collector or arterial roadways. Local collectors are fronted by residential uses and do not typically serve commercial uses. Local streets provide direct access to abutting residential properties as their primary function. Local streets have no more than two travel lanes and may or may not accommodate on-street parking. In most areas of Los Altos, local streets do not include sidewalks.

Any of the roadway classifications may deviate from typical standards where physical constraints exist or where preservation of community character dictates special treatment. Although specific roadway design may vary, the overriding objective is that all roadways carry the volume of traffic at a safe travel speed. The classification of streets has a bearing on the types of traffic calming measures that are considered appropriate for specific roadway segments.

The roadways of Rosita Avenue and Campbell Avenue are considered local streets according to the General Plan. Cuesta Drive is designated as a collector while Covington Road is considered a local collector. All of the study segments provide one travel lane in each direction.

Traffic Volume Evaluation

The definition of an acceptable amount of traffic on a local residential street is subjective and depends upon many factors such as housing set-backs, street width, presence of on-street parking, location (downtown, suburbs, rural), and the connectivity of adjacent streets. Even two-lane local residential streets are physically capable of carrying volumes in excess of 10,000 vpd, where the constraint on capacity is typically the traffic control at each intersection (i.e., stop signs or signal). However, high volumes in this range would cause excessive delays for vehicles backing out of driveways, would not provide a pleasant pedestrian experience, and would not typically represent a "livable" street. Intersection peak-hour volumes are a better indicator of roadway operations, especially in Los Altos, where widening of roadway segments to accommodate existing and future volumes is limited by right-of-way and other physical constraints, in addition to City Council policies.

There is no traffic engineering industry standard or guideline for a volume impact threshold (i.e., the amount of added traffic deemed to be a significant amount). By setting total volume and impact thresholds, a jurisdiction can determine the number of streets that potentially qualify for Neighborhood Traffic Management (NTM)/traffic calming measures. Thus, a lower threshold would result in a greater number of streets that a city or county may have to address which may not be feasible, especially given the recent economic downturn. The evaluation of daily volumes is provided for informational purposes only.

Existing and Projected Volumes

Daily traffic counts were conducted on selected roadways in the vicinity of the Aquatic Center site during Summer (August 2003) and Non-Summer (October 2003) months. The daily trip generation estimates for the proposed pool facility were assigned to the roadways based on the same trip distribution that was used for the intersection analysis. These volumes are presented in Table 1.

Table 1

Average Roadway Volumes with Project Generated Traffic

Segment	Summer Volumes[1]			Non-Summer Volumes[1]		
	Existing	Added	Total	Existing	Added	Total
Cuesta Dr, west of Campbell Ave	6,680	660	7,340	7,770	480	8,250
Rosita Ave, west of Campbell Ave	720	1,540	2,260	830	1,130	1,960
Rosita Ave, east of Campbell Ave	620	385	1,005	605	285	890
Campbell Ave, south of Rosita Ave	1,130	710	1,840	1,385	520	1,905
Covington Rd, west of Campbell Ave	Not available			2,450	100	2,550

Note: [1] Volumes expressed in vehicles per day

[2] The Covington Road data was not available during the Summer months count due to pavement construction.

The existing Non-Summer volumes are higher than the existing Summer volumes on every segment except the segment of Rosita Avenue, east of Campbell Avenue. The number of trips generated by the proposed facility is larger during the Summer. Therefore, the Non-Summer volumes represent a higher baseline volume than the Summer volumes.

Comparable Roadway Facilities

The City of Los Altos maintains a Neighborhood Traffic Management Program (NTMP) to address existing traffic problems in neighborhoods. City staff provided counts at 20 locations throughout the city from the NTMP program for comparison purposes. These counts were compared to the counts conducted on Covington Road, Campbell Avenue, and Rosita Avenue during the Non-Summer time period. These roadways provide a comparison of daily roadway volumes to determine the livability of the local streets in the City of Los Altos.

Covington Road

The existing daily count on Covington Road was 2,450 vehicles per day. The only roadway that may be comparable in function and volume to Covington Road included in the counts was University Avenue. University Avenue connects two larger capacity roadways (Edith Avenue and El Monte Road) in the same way that Covington Road connects El Monte Avenue and Springer Road near the project site. At three different locations on University Avenue the average daily volume was 2,410 vehicles per day.

Campbell Avenue

The roadways of Hawthorne Avenue, east of El Monte Avenue and S. Gordon Way are similar to Campbell Avenue. Hawthorne Avenue connects El Monte Avenue to the local residential streets east of El Monte Road. S. Gordon Way connects Almond Avenue and Hawthorne Avenue. The existing daily count on Campbell Avenue was 1,385 vehicles per day. S. Gordon Way serves 1,290 vehicles per day and Hawthorne Avenue carries 970 vehicles per day.

Rosita Avenue

Two locations were found to be comparable to Rosita Avenue: Casita Way and N. Clark Avenue. Casita Way dead ends into the back of Los Altos High School and N. Clark Avenue dead ends into Almond Elementary School. Both of these roadways act like Rosita Avenue in that they provide access to a public facility from local residential streets. There were 830 vehicles per day recorded on Rosita Avenue, west of Campbell Avenue and 600 vehicles per day on Rosita Avenue, east of Campbell Avenue. Casita Way between Jardin Drive and Alvarado Avenue had 780 vehicles per day, while the segment between Alvarado Avenue and Marich Way had 1,340 vehicles per day.

This evaluation shows that there are comparable streets in other areas of the City that serve traffic volumes in the same range as those projected for the study street segments. City staff will make the final determination on whether the study street segments qualify for inclusion in the NTMP process, and the identification of traffic calming measures if warranted.

FINAL REPORT

TRANSPORTATION IMPACT ANALYSIS

for the

LOS ALTOS COMMUNITY POOL
(Los Altos, California)

Prepared for:
David J Powers Associates

Prepared by:

FEHR & PEERS
TRANSPORTATION CONSULTANTS

March 2004

Final Report

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EXECUTIVE SUMMARY

This report presents the results of the Transportation Impact Analysis (TIA) conducted for the proposed Los Altos Community Pool located on Rosita Avenue in Los Altos, California. The purpose of the analysis is to identify the likely transportation impacts of a proposed project on the surrounding roadway system and to identify improvements to mitigate significant impacts. The proposed project includes two swimming pools and a 4,000-square foot building that would provide showers, lockers, and changing areas for pool users. The competition pool would be 25 yards by 25 meters in length and primarily serve lap swimming, training, and other related competitive uses. The second pool will be 25 by 25 yards and be utilized as a teaching pool (lessons, classes, etc.) and for community swim.

The impacts of the proposed project were estimated following guidelines of the City of Los Altos and the Santa Clara Valley Transportation Authority (VTA), which is the Congestion Management Agency (CMA) for Santa Clara County. The operations of six (6) intersections were evaluated during the morning (AM) and evening (PM) peak periods under Existing, Background, Project, and Cumulative Conditions.

Project Trips

The amount of added traffic generated by the proposed project was estimated based on a preliminary schedule provided by SPLASH (likely pool operators), a survey of an existing pool facility, and assumptions regarding the number of participants and length of stay per event. These assumptions and trip estimates were verified by SPLASH and city staff and are considered to be a conservative estimate for an average weekday during the non-summer months when schools are typically in session. Based on these calculations, it is estimated that the proposed swim facility is estimated to generate 1,419 daily trips with 124 AM peak-hour trips (59 inbound/65 outbound) and 116 PM peak-hour trips (74 inbound/42 outbound) during non-summer conditions. For comparison purposes, the project is expected to generate an additional 516 daily trips, 49 fewer AM peak hour trips, and 72 additional PM peak hour trips during the summer months.

A review of existing traffic counts conducted in August and October 2003 showed that the summer peak hour intersection counts were an average of 20 to 40 percent lower as compared to those obtained in October. When the background and project volumes were combined, the highest amount of traffic on the study roadways with the project in place would occur during the non-summer months. Thus, the non-summer period (which is also longer in duration over the year) and the corresponding trip generation estimates were used to identify project impacts.

The trip distribution pattern for project traffic was estimated based on existing travel patterns in the vicinity of the site and the relative locations of complementary land uses. The project-generated traffic was assigned to specific streets, intersections, and turning movements to determine the potential impacts of the proposed project.

Intersection Levels of Service

Using the information supplied by the City of Los Altos (existing counts and signal timings), data obtained in the field, and the description of the proposed project, level of service (LOS) calculations were conducted for Existing, Background, Project, and Cumulative Conditions. The results of the intersection and roadway segment levels of service calculations for each scenario are presented in

Table ES-1. The minimum acceptable operating level of service for an intersection in the City of Los Altos is LOS D.

Table ES-1

Intersection Level of Service Summary

Intersection	Peak Hour	Existing		Background		Project				Cumulative	
		Delay (sec)[1]	LOS[2]	Delay (sec)[1]	LOS[2]	Delay (sec)[1]	LOS[2]	Δ in Crit. Delay[3]	Δ in Crit. V/C[4]	Delay (sec)[1]	LOS[2]
El Monte Avenue and Covington Road (s)	AM	12.4	B	12.4	B	12.5	B	0.1	0.003	12.5	B
	PM	9.6	A	9.6	A	9.6	A	0.0	0.003	9.7	A
Campbell Avenue and Cuesta Drive (us)	AM	12.5	B	12.5	B	13.3	B	NA	NA	13.8	B
	PM	11.0	B	11.0	B	11.5	B	NA	NA	12.1	B
Springer Avenue and Cuesta Drive(us)	AM	30.4	D	30.8	D	33.1	D	NA	NA	36.9	E
	PM	28.8	D	29.4	D	31.3	D	NA	NA	36.4	E
Campbell Avenue and Rosita Avenue(us)	AM	10.4	B	10.4	B	11.3	B	NA	NA	11.3	B
	PM	10.1	B	10.1	B	10.9	B	NA	NA	10.9	B
Springer Road and Rosita Avenue(us)	AM	22.3	C	22.7	C	26.0	D	NA	NA	26.3	D
	PM	17.8	C	17.9	C	19.2	C	NA	NA	19.6	C
Campbell Avenue and Covington Road (us)	AM	8.5	A	8.5	A	8.6	A	NA	NA	8.6	A
	PM	7.6	A	7.6	A	7.7	A	NA	NA	7.7	A

Notes:
[1] Whole intersection weighted average control delay expressed in seconds per vehicle for signalized intersections For two-way stop controlled unsignalized intersections, total control delay for the worst movement/approach, expressed in seconds per vehicle, is presented. For all way stop controlled unsignalized intersections, the average control delay of all movements expressed in seconds per vehicle, is presented. Calculations performed using the 2000 *HighwayCapacity Manual* (HCM) methodology contained in TRAFFIX.
[2] LOS = Level of service
[3] Increase in average critical movement delay between Background and Project Conditions for signalized intersections.
[4] Increase in volume to capacity ratio between Background and Project Conditions for signalized intersections.
NA = Not applicable
(s) denotes signalized intersection
(us) denotes unsignalized intersection
Significant impacts highlighted in **bold**

Intersection Impacts

The results of the LOS calculations for Project Conditions were compared to the results for Background Conditions to identify significant project traffic impacts. Implementation of the proposed project would result in a significant impact if the addition of project traffic caused:

Signalized Intersections

1. The level of service at a signalized intersection operating at LOS D or better under Background Conditions to deteriorate to LOS E or F, or

2. An increase in the critical movement delay at a signalized intersection operating at LOS E or F under Background Conditions by four (4) or more seconds and an increase in the critical V/C ratio by 0.01 or more.

Unsignalized Intersections

1. Operations to deteriorate from an acceptable level (LOS D or better) under Background Conditions to an unacceptable level (LOS E or LOS F); or

2. Exacerbation of unacceptable operations (LOS E or F) at an unsignalized intersection by increasing the control delay, and

3. Volumes under Project Conditions to exceed the Caltrans Peak Hour Volume Warrant Criteria.

According to these criteria, the project will not cause a significant intersection impact at any of the study intersections under near-term project conditions.

At the intersection of Springer Avenue and Cuesta Drive, the proposed project will significantly contribute to a cumulative impact. A signal warrant analysis was performed during the AM peak hour under Cumulative Conditions. Based on the Caltrans peak-hour volume warrant, a signal is warranted. It should be noted that the signal is also warranted using the Existing Conditions traffic volumes for the AM peak hour.

Signal Warrant Analysis

Signal warrant analyses were conducted at all five unsignalized study intersections based on criteria published in the Caltrans *Traffic Manual* under Existing, Background, Project, and Cumulative Conditions. The results of this analysis showed that a traffic signal is warranted based on existing AM peak-hour volumes at the Cuesta Drive/Springer Avenue intersection. The addition of traffic under Background and Project Conditions exacerbates this need based on warrants.

According to guidelines in the Caltrans *Traffic Manual*, the decision to install traffic signals should not be based solely on the satisfaction of warrants. Installation of traffic signals should also be based upon other factors such as delay, congestion, driver confusion, etc. The City of Los Altos will ultimately determine the need for a traffic signal at this location.

Site Access and Parking

Based on the projected volume on Rosita Avenue and the project-generated traffic, one driveway is sufficient to accommodate the projected peak-hour traffic volumes. No changes to on-site circulation are recommended.

The combined parking demand of the proposed project and park uses is expected to be 113 spaces on a typical weekday. On weekend days in the summer, it is possible that the peak demand of the pool facility alone could be 100 to 115 parking spaces depending on recreational usage. This would leave a nominal number of spaces for participants in games at Rosita Park and other visitors. Thus, it is recommended that the maximum supply of 126 parking spaces be provided to accommodate not only typical weekday demand, but also the demand for simultaneous baseball or soccer games at Rosita Park.

To properly manage the peak parking demand and to reduce the potential for intrusion into the adjacent neighborhood, the project sponsor should establish a parking management program (PMP). The PMP will involve review of and coordination with schedules of all organized park users and should include establishment of an agreement with the Los Altos School District for shared use of the Covington School parking lot for overflow needs. Coordination with the Los Altos Police Department would also be part of the PMP to ensure periodic enforcement of all traffic laws regarding parking in the Rosita neighborhood.

CHAPTER 1 - INTRODUCTION

This report presents the results of the Transportation Impact Analysis (TIA) conducted for the proposed Los Altos Community Pool located on Rosita Avenue in the City of Los Altos, California. The proposed Community Pool is 35,235 square feet in size and consist of two pools, a wading pool/water play area for younger children, a main building, and a mechanical building. The site location and surrounding roadway network are presented on Figure 1. The proposed project site plan is shown on Figure 2.

The impacts of the development were evaluated following the guidelines of the City of Los Altos and the Santa Clara Valley Transportation Authority (VTA), the congestion management agency of Santa Clara County. The focus of the analysis is the key intersections on the roadway system. The following intersections were included in the analysis:

- El Monte Avenue and Covington Road
- Campbell Avenue and Cuesta Drive
- Springer Road and Cuesta Drive
- Campbell Avenue and Rosita Avenue
- Springer Road and Rosita Avenue
- Campbell Avenue and Covington Road

None of these intersections are designated Congestion Management Program (CMP) intersections monitored by the VTA.

The operations of the key intersections were evaluated during the morning (AM) and evening (PM) peak hours for the following scenarios:

Scenario 1: *Existing Conditions* - Existing volumes obtained from counts.

Scenario 2: *Background Conditions* - Existing volumes plus traffic from approved but not yet constructed developments in the area.

Scenario 3: *Project Conditions* - Background volumes plus traffic generated by the proposed development.

Scenario 4: *Cumulative Conditions* - Project volumes plus a growth factor until the date of final occupancy plus traffic associated with other pending developments in the study area. This methodology is consistent with the City of Los Altos' General Plan.

INSERT FIGURE 1
SITE LOCATION

Figure 2
Site Plan

The remainder of this report is divided into six chapters. The existing transportation system serving the site, including the roadway facilities, bicycle and pedestrian facilities, transit service, and the existing operating conditions of the study intersections are presented in Chapter 2. Background Conditions, representing existing conditions plus approved project trips in the area, is contained in Chapter 3. Chapter 4 describes the methodology used to estimate the project traffic and its impacts on the transportation system. Cumulative Conditions, representing Project Conditions plus traffic from pending developments is contained in Chapter 5. Operational issues that include signal warrants, site access, and parking are addressed in Chapter 6. The conclusions of this transportation impact analysis are presented in Chapter 7.

CHAPTER 2 - EXISTING CONDITIONS

This chapter provides a description of the existing transportation system in the vicinity of the project site. The transportation system includes roadway facilities, bicycle and pedestrian facilities, and transit service. Operations of the study intersections are also documented in this chapter.

Existing Roadway Network

Interstate 280 (I-280), Foothill Expressway, and El Camino Real provide regional access to the project site. El Monte Avenue, Cuesta Drive, Springer Road, Campbell Avenue, Covington Road, and Rosita Avenue provide local access to the project site. Descriptions of these are presented below:

I-280 is generally an eight-lane freeway (four mixed-flow lanes in each direction north of the Magdalena Avenue interchange; three mixed-flow lanes plus one high occupancy vehicle (HOV) lane from Magdalena Avenue south). This north-south freeway extends from San Francisco to San Jose. Access between Los Altos and I-280 is provided by El Monte Avenue, Magdalena Avenue, and Foothill Expressway.

Foothill Expressway is a four-lane divided expressway that extends between Cupertino and Palo Alto through Los Altos. Foothill Expressway has eight access points within Los Altos city limits, including an interchange at I-280. The two access points closest to the proposed project are El Monte Avenue and Springer Road.

El Camino Real (SR 82) is a six-lane major arterial extending through Los Altos south towards San Jose and north towards San Francisco. El Camino Real is the historic main highway serving inter-city travel between San Jose and San Francisco. El Camino Real is under the jurisdiction of the California Department of Transportation (Caltrans).

El Monte Avenue is a two-lane roadway north of Foothill Expressway and a four-lane roadway between Foothill Expressway and I-280. El Monte is generally oriented in a northeast-southwest direction with its northern terminus at El Camino Real.

Cuesta Drive is an east-west two-lane road that extends between San Antonio Road and Grant Road. East of Springer Road to Miramonte Avenue in Mountain View, Cuesta Drive includes two lanes plus a two-way center left-turn lane. Between Miramonte Avenue and Grant Road, Cuesta Drive includes two lanes in each direction.

Springer Road is a two-lane street that extends in a north-south direction between Foothill Expressway and El Monte Avenue. Springer Road provides access to El Camino Real to the north in the City of Mountain View. South of Foothill Expressway, Springer Road becomes Magdalena Avenue.

Campbell Avenue is a two-lane north-south residential street that connects Cuesta Drive and Fremont Avenue.

Covington Road is designated as a local collector roadway and is generally oriented in an east-west direction. Covington Road connects Grant Road and El Monte Road where it becomes Giffin Road.

Rosita Avenue is a two-lane roadway that originates at the project site and travels east to Springer Road where it becomes Rose Avenue. Rosita Avenue will provide direct access to the project site.

Existing Transit Service

The Santa Clara Valley Transportation Authority (VTA) operates bus, light rail transit, and paratransit service throughout Santa Clara County. Bus transit service within the City of Los Altos includes six fixed routes and paratransit service (dial-a-ride service for qualified individuals). Bus routes 23 and 52 are the only two routes that operate in the vicinity of the project site.

Route 23 is a bus route operating between Downtown San Jose and San Antonio Shopping Center via Foothill Expressway and San Antonio Road in Los Altos. The weekday hours of operation are from 5:00 am to 12:30 am with 15- to 60-minute headways. Weekend operations are provided between the hours of 6:00 am and midnight with 15- to 60-minute headways.

Route 52 is a bus route operating between Foothill College and Downtown Mountain View via El Camino Real and El Monte Avenue. The weekday hours of operation are from 6:30 am to 10:00 pm with 30- to 60-minute headways. There is no weekend service. Route 52 is the closest transit route to the site operating on El Monte Avenue with bus stops just north of the Covington Road/El Monte Road intersection.

Paratransit service is operated under contract with OUTREACH, a private, non-profit paratransit broker. This door-to-door service is provided within the County to riders who meet the eligibility requirements established by the Americans with Disabilities Act (ADA).

Caltrain provides heavy rail passenger service between Gilroy in Santa Clara County, through San Mateo County, to San Francisco. Service is maintained and operated by the Joint Powers Board. The closest Caltrain stations to Los Altos are located on Central Expressway near San Antonio Road and near Castro Street at the Downtown Mountain View Transit Center. The San Antonio station can be accessed by VTA bus service via Route 23 and a short walk, while VTA access to the Downtown Mountain View station is provided directly via Routes 52 and a short walk.

Existing Bicycle and Pedestrian Facilities

Bicycle facilities comprise bike paths (Class I), bike lanes (Class II), and bike routes (Class III). Bike paths are paved pathways for use by bicycles that are completely separated from roadways. Bike lanes are lanes on roadways designated for bicycle use by special lane markings, pavement legends, and signage. Bike routes are designated with signs only and require bicyclists to share the traveled way with motorists. In the vicinity of the site, bike lanes are delineated on El Monte Avenue and Springer Road, while bike routes are designated on Cuesta Drive and Covington Road. Foothill Expressway has wide shoulder strips that connect to regional bicycle facilities.

Pedestrian facilities improve safety for pedestrians and can also encourage the use of alternative modes of transportation. These facilities include sidewalks, paths, trails, pedestrian bridges, crosswalks, and pedestrian signals with crosswalks at signalized intersections to accommodate pedestrian circulation. Near the site, sidewalks are located along El Monte Avenue and along Cuesta Drive east of El Monte Avenue. Crosswalks are provided at the intersections of El Monte Avenue and Covington Road, El Monte Avenue and Cuesta Drive, Springer Road and Cuesta Drive, Springer Road and Rosita Avenue, and Campbell Avenue and Rosita Avenue. A pathway is

located along the north side of Rosita Avenue, and the west side of Campbell Avenue between Rosita and Cuesta.

Existing Intersection Traffic Volumes

Intersection operations were evaluated for both morning (AM) and evening (PM) peak traffic conditions. New intersection turning movement counts were conducted in October and November 2003 and are presented in Appendix A. Additionally intersection turning movement counts were conducted in August 2003 for comparison purposes between Summer and Non-Summer time periods. When comparing the Summer to Non-Summer count data, it was found that the morning peak-hour traffic volumes were approximately forty percent less during the Summer, while evening peak-hour volumes were approximately twenty percent lower. Therefore, using the October counts with higher volumes is more conservative and would result in identifying the most potential impacts. Figure 3 presents the existing AM and PM peak-hour turning movement volumes for the study intersections and Figure 4 presents existing lane configurations. The intersection of El Monte Avenue and Covington Road is controlled with a traffic signal while the rest of the intersections are controlled by stop signs.

Existing Intersection Levels of Service

The operations of the study intersections were evaluated using Level of Service (LOS) calculations. *Level of Service* is a qualitative description of an intersection's operation, ranging from LOS A, or free-flow conditions, to LOS F, or oversaturated conditions.

Signalized study intersections were evaluated with the method adopted by the City of Los Altos and the VTA. This method evaluates intersection operations based on the average control vehicular delay for all vehicles entering the intersection as described in the *2000 Highway Capacity Manual* with adjustments to the saturation flow rates to reflect local (Santa Clara County) conditions. The average control delay for signalized intersections was calculated using the TRAFFIX analysis software and correlated to a LOS designation as shown in Table 1. The level of service standard (i.e., minimum acceptable operations) for the City of Los Altos is LOS D.

For unsignalized intersections (all way stop-controlled and side street stop-controlled), the level of service calculations were conducted using the methodology contained in Chapter 17 of the *2000 Highway Capacity Manual.* The LOS rating at all way stop-controlled intersections is based on the weighted average control delay expressed in seconds per vehicle for all approaches. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration. At two-way or side street-controlled intersections, level of service is calculated for each controlled movement, not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. Table 2 summarizes the relationship between delay and LOS for unsignalized intersections.

To evaluate current operations of the study intersections, existing volumes and lane configurations were used as inputs to the TRAFFIX level of service program. The results are presented in Table 3 and the corresponding LOS calculation sheets are presented in Appendix B.

INSERT FIGURE 3
EXISTING VOLUMES FOR INTERSECTIONS

INSERT FIGURE 4
EXISTING lane configurations FOR INTERSECTIONS

Table 1

Signalized Intersection Level of Service Definitions

Level of Service	Average Control Delay Per Vehicle (Seconds)	Description
A	≤ 10.0	Operations with very low delay occurring with favorable progression and/or short cycle lengths.
B+ B B-	10.1 to 12.0 12.1 to 18.0 18.1 to 20.0	Operations with low delay occurring with good progression and/or short cycle lengths.
C+ C C-	20.1 to 23.0 23.1 to 32.0 32.1 to 35.0	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.
D+ D D-	35.1 to 39.0 39.1 to 51.0 51.1 to 55.0	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.
E+ E E-	55.1 to 60.0 60.1 to 75.0 75.1 to 80.0	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.
F	> 80.0	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.

Source: VTA's *Congestion Management Program Transportation Impact Analysis Guidelines*, June 2003 and *Highway Capacity Manual* 2000.

Table 2

Level of Service Criteria for Unsignalized Intersections

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Little or no delay	≤ 10.0
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 50.0

Source: Transportation Research Board, *Highway Capacity Manual*, 2000.

Table 3

Existing Intersection Levels of Service

Intersection	Peak Hour	Count Date	Delay (sec)[1]	LOS[2]
El Monte Avenue and Covington Road (s)	AM	10/09/03	12.4	B
	PM	10/09/03	9.6	A
Campbell Avenue and Cuesta Drive (us)	AM	10/09/03	12.5	B
	PM	10/09/03	11.0	B
Springer Avenue and Cuesta Drive(us)	AM	11/13/03	30.4	D
	PM	10/09/03	28.8	D
Campbell Avenue and Rosita Avenue(us)	AM	10/09/03	10.4	B
	PM	10/09/03	10.1	B
Springer Road and Rosita Avenue(us)	AM	10/09/03	22.3	C
	PM	10/09/03	17.8	C
Campbell Avenue and Covington Road (us)	AM	10/09/03	8.5	A
	PM	10/09/03	7.6	A

Notes:

[1] Whole intersection weighted average control delay expressed in seconds per vehicle for signalized intersections. For two-way stop controlled unsignalized intersections, total control delay for the worst movement/approach, expressed in seconds per vehicle, is presented. For all way stop controlled unsignalized intersections, the average control delay of all movements expressed in seconds per vehicle, is presented. Calculations performed using the 2000 *HighwayCapacity Manual* (HCM) methodology contained in TRAFFIX.

[2] LOS = Level of service

(s) denotes signalized intersection

(us) denotes unsignalized intersection

Under existing peak-hour conditions, all of the study intersections operate at LOS D or better during both peak hours. Based on the City of Los Altos standard, all of the key intersections currently operate at an acceptable level.

CHAPTER 3 - BACKGROUND CONDITIONS

This chapter discusses the operations of the intersections under Background Conditions. Background Conditions are defined as conditions prior to completion of the proposed project. Traffic volumes for Background Conditions are comprised of existing volumes plus traffic generated by approved developments in the area. This chapter describes the procedure used to determine the background traffic volumes and the results of the level of service analysis for Background Conditions.

Background Traffic Estimates

The traffic volumes for Background Conditions were estimated by adding traffic generated by approved but not yet constructed projects in the vicinity of the site to the existing volumes. Two approved projects that were identified by city staff to be included under Background Conditions at the time that this report was prepared are: 1) The Trader Joe's market in the Foothill Plaza shopping center and 2) a 56-unit residential development on El Camino Real. Traffic volumes for each use were estimated using rates published in *Trip Generation* by the Institute of Transportation Engineers (ITE) and were distributed to City streets based on existing travel patterns and complementary land uses. Approved trips were assigned to the study intersections and then added to existing volumes. The resulting background traffic volumes are presented on Figure 5.

Background Roadway Improvements

No planned and funded intersection improvements were identified by the city staff for this study.

Background Intersection Levels of Service

Table 4 presents the LOS calculation results for the study intersections under Background Conditions. These calculations assume no changes to the existing intersection lane configurations or traffic control devices and include background traffic volumes. The LOS calculation sheets are contained in Appendix B.

All study intersections are expected to continue to operate at the same level of service as under Existing Conditions (LOS D or better during both peak hours) with the addition of traffic from approved but not yet constructed developments.

Insert Figure 5 background volumes

Table 4

Background Intersection Levels of Service

Intersection	Peak Hour	Delay (sec)[1]	LOS[2]
El Monte Avenue and Covington Road (s)	AM	12.4	B
	PM	9.6	A
Campbell Avenue and Cuesta Drive (us)	AM	12.5	B
	PM	11.0	B
Springer Avenue and Cuesta Drive(us)	AM	30.8	D
	PM	29.4	D
Campbell Avenue and Rosita Avenue(us)	AM	10.4	B
	PM	10.1	B
Springer Road and Rosita Avenue(us)	AM	22.7	C
	PM	17.9	C
Campbell Avenue and Covington Road (us)	AM	8.5	A
	PM	7.6	A

Notes:
[1] Whole intersection weighted average control delay expressed in seconds per vehicle for signalized intersections. For two-way stop controlled unsignalized intersections, total control delay for the worst movement/approach, expressed in seconds per vehicle, is presented. For all way stop controlled unsignalized intersections, the average control delay of all movements expressed in seconds per vehicle, is presented. Calculations performed using the 2000 *HighwayCapacity Manual* (HCM) methodology contained in TRAFFIX.
[2] LOS = Level of service
(s) denotes signalized intersection
(us) denotes unsignalized intersection

CHAPTER 4 - PROJECT CONDITIONS

The impacts of the proposed development on the surrounding roadway system are discussed in this chapter. First, the methodology used to estimate the amount of traffic generated by the project is described. Then, the distribution of project-generated traffic to the roadway system is discussed. The operations of the study intersections were analyzed under Project Conditions with level of service calculations. The intersection impacts of the project are identified by comparing the results of the level of service calculations for Project Conditions to the results for Background Conditions.

Project Traffic Estimates

The amount of traffic associated with a project is estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In the first step, the amount of traffic entering and exiting the site is estimated on both a daily and a peak-hour basis. In the second step, the directions the trips use to approach and depart from the site are estimated. The trips are assigned to specific street segments and intersection turning movements in the third step. The results of this analysis are described in the following sections.

Trip Generation

The proposed Community Pool consists of constructing two swimming pools, a wading pool, and a 4,000-square foot building that would provide showers, lockers, and changing areas for pool users. The competition pool would be 25 yards by 25 meters in length and primarily serve lap swimming, training, and other related competitive uses. The second pool will be 25 yards by 25 yards and be utilized as a teaching pool (lessons, classes, etc.).The wading pool will be less than 1,000 square feet.

The amount of added traffic generated by the proposed project was estimated based on a preliminary schedule provided by SPLASH (likely pool operators), a survey of an existing pool facility, and assumptions regarding the number of participants and length of stay per event. These assumptions and trip estimates were verified by SPLASH and city staff and are considered to be a conservative estimate for an average weekday during the non-summer months when schools are typically in session. A detailed summary of these trip generation estimates and the schedules are presented in Appendix C.

Based on these calculations, it is estimated that the proposed swim facility is estimated to generate 1,419 daily trips with 124 AM peak-hour trips (59 inbound/65 outbound) and 116 PM peak-hour trips (74 inbound/42 outbound). The trip generation estimates are presented in Table 5.

For comparison purposes, the project is estimated to generate a total of 1,935 daily trips, 75 AM peak hour trips, and 188 PM peak hour trips during the summer months. Although the daily and PM peak hour totals for summer conditions are higher than the corresponding non-summer totals, the amount of existing traffic is an average of 20 to 40 percent less during summer month peak hours. This non-summer time period was chosen for this analysis due to the higher existing volumes on the roadways in comparison to the summer time period. Accordingly, the total intersection volumes with the project used for the non summer months would represent a more conservative analysis. According to the project sponsor, the summer month programs would only occur when schools as not in session.

Table 5

Project Trip Generation Estimates

Land Use	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Community Pool	1,419	59	65	124	74	62	116

Source: Trip estimate assumptions summarized in Appendix C.

Trip Distribution

The trip distribution pattern for the proposed pool facility was estimated based on existing travel patterns in the vicinity of the site, the relative locations of complementary land uses in the area, and information regarding participants provided by SPLASH. The major directions of approach and departure for the project site are shown on Figure 6.

Trip Assignment

The trips generated by the proposed Community Pool were assigned to the roadway system based on the directions of approach and departure discussed above. The project trip assignment is presented on Figure 6. Project trips were added to Background traffic volumes to estimate volumes under Project Conditions. These volumes are presented on Figure 7.

Project Intersection Levels of Service

Intersection level of service calculations were conducted to evaluate the operating conditions of the intersections with project traffic to identify potential impacts to the local roadway system. The results of the intersection level of service calculations for Background and Project Conditions are summarized in Table 6. The changes in critical movement delay and critical volume-to-capacity ratio for the signalized intersection due to the addition of project traffic is also presented in Table 6. The intersection LOS calculation sheets and comparison reports (for critical movement delay) are included in Appendix B.

All of the study intersections will continue to operate at acceptable levels of service under Project Conditions (LOS D or better) during both peak hours with the addition of traffic from the proposed project.

INSERT FIGURE 6
TRIP DISTRIBUTION and trip assignment

INSERT FIGURE 7
PROJECT VOLUMES

Table 6

Background and Project Intersection Levels of Service

Intersection	Peak Hour	Background		Project			
		Delay (sec)[1]	LOS[2]	Delay (sec)	LOS	Δ in Crit. Delay[3]	Δ in Crit. V/C[4]
El Monte Avenue and Covington Road (s)	AM	12.4	B	12.5	B	0.1	0.003
	PM	9.6	A	9.6	A	0.0	0.003
Campbell Avenue and Cuesta Drive (us)	AM	12.5	B	13.3	B	NA	NA
	PM	11.0	B	11.5	B	NA	NA
Springer Avenue and Cuesta Drive(us)	AM	30.8	D	33.1	D	NA	NA
	PM	29.4	D	31.3	D	NA	NA
Campbell Avenue and Rosita Avenue(us)	AM	10.4	B	11.3	B	NA	NA
	PM	10.1	B	10.9	B	NA	NA
Springer Road and Rosita Avenue(us)	AM	22.7	C	26.0	D	NA	NA
	PM	17.9	C	19.2	C	NA	NA
Campbell Avenue and Covington Road (us)	AM	8.5	A	8.6	A	NA	NA
	PM	7.6	A	7.7	A	NA	NA

Notes:
[1] Whole intersection weighted average control delay expressed in seconds per vehicle for signalized intersections. For two-way stop controlled unsignalized intersections, total control delay for the worst movement/approach, expressed in seconds per vehicle, is presented. For all way stop controlled unsignalized intersections, the average control delay of all movements expressed in seconds per vehicle, is presented. Calculations performed using the 2000 *HighwayCapacity Manual* (HCM) methodology contained in TRAFFIX.
[2] LOS = Level of service
[3] Increase in average critical movement delay between Background and Project Conditions for signalized intersections.
[4] Increase in volume to capacity ratio between Background and Project Conditions for signalized intersections.
NA = Not applicable
(s) denotes signalized intersection
(us) denotes unsignalized intersection
Significant impacts highlighted in **bold**

Project Intersection Impacts

The results of the LOS calculations for Project Conditions were compared to the results for Background Conditions to identify significant project traffic impacts. Implementation of the proposed project would result in a significant impact if the addition of project traffic caused:

Signalized Intersections

1. The level of service at a signalized intersection operating at LOS D or better under Background Conditions to deteriorate to LOS E or F, or

2. An increase in the critical movement delay at a signalized intersection operating at LOS E or F under Background Conditions by four (4) or more seconds and an increase in the critical V/C ratio by 0.01 or more.

Unsignalized Intersections

1. Operations to deteriorate from an acceptable level (LOS D or better) under Background Conditions to an unacceptable level (LOS E or LOS F); or
2. Exacerbation of unacceptable operations (LOS E or F) at an unsignalized intersection by increasing the control delay, and
3. Volumes under Project Conditions to exceed the Caltrans Peak Hour Volume Warrant Criteria.

According to these criteria, the project will not cause a significant intersection impact at any of the study intersections.

CHAPTER 5 - CUMULATIVE CONDITIONS

This chapter presents the results of the level of service calculations under Cumulative Conditions. Cumulative Conditions are defined as Project Condition volumes plus traffic associated with proposed, but not yet approved developments. A completion and occupancy time period of two years was assumed for the proposed project.

Cumulative Traffic Estimates

Cumulative traffic volumes include existing volumes that are increased by an annual growth factor through the project's completion date, plus traffic generated by approved and pending developments in the project study area, plus traffic generated by the proposed project. A list of pending developments was developed based on information obtained from the City of Los Altos' General Plan. The following possible land use changes are identified in the General Plan: 1) 35 new dwelling units and 261,000 square feet of commercial development in the Downtown core, 2) 42 new dwelling units and 174,000 square feet commercial development in the Downtown Periphery, 3) 234 new dwelling units in the El Camino Real corridor, 3) 36 new dwelling units in the Foothill Plaza area, and 4) 50 dwelling units on the El Retiro site. Trip generation estimates for these projects were assigned to the study area and the resulting traffic volumes were added to the Project Condition volumes at each study intersection.

The traffic analysis for the Circulation Element of the General Plan includes a growth factor applied to the existing volumes to account for regional growth on roadways in the city that may be used by vehicles destined to locations outside the city. A growth factor of one half percent per year was used in this analysis for a period of two years to be consistent with the methodology used in the General Plan. The resulting traffic volumes are shown on Figure 8.

Cumulative Intersection Levels of Service

Intersection operations were evaluated with level of service calculations. The results of the LOS analysis for the key intersections are summarized in Table 7.

Five of the six study intersections are projected to continue to operate at the same levels of service as under Project Conditions. With the proposed project, the Springer Avenue/Cuesta Drive intersection is projected to degrade to LOS E under Cumulative Conditions. The Springer Avenue/Cuesta Drive intersection is projected to provide LOS D operations without the proposed project. Based on the criteria outlined under Project Conditions, this intersection would have a cumulative significant impact.

Cumulative Intersection Improvements

As noted above, the addition of project traffic degrades the operating level at the Springer Avenue/Cuesta Drive intersection from an acceptable level (LOS D) to an unacceptable level (LOS E). Thus, improvements were investigated that would meet the city's LOS standard and goal of LOS D.

Figure 8: Cumulative Intersection Peak-Hour Volumes

Table 7

Cumulative Intersection Levels of Service

Intersection	Peak Hour	Delay (sec)[1]	LOS[2]
El Monte Avenue and Covington Road (s)	AM	12.5	B
	PM	9.7	A
Campbell Avenue and Cuesta Drive (us)	AM	13.8	B
	PM	12.1	B
Springer Avenue and Cuesta Drive(us)	AM	36.9	E
	PM	36.4	E
Campbell Avenue and Rosita Avenue(us)	AM	11.3	B
	PM	10.9	B
Springer Road and Rosita Avenue(us)	AM	26.3	D
	PM	19.6	C
Campbell Avenue and Covington Road (us)	AM	8.6	A
	PM	7.7	A

Notes:
[1] Whole intersection weighted average control delay expressed in seconds per vehicle for signalized intersections. For two-way stop controlled unsignalized intersections, total control delay for the worst movement/approach, expressed in seconds per vehicle, is presented. For all way stop controlled unsignalized intersections, the average control delay of all movements expressed in seconds per vehicle, is presented. Calculations performed using the 2000 *HighwayCapacity Manual* (HCM) methodology contained in TRAFFIX.
[2] LOS = Level of service
(s) denotes signalized intersection
(us) denotes unsignalized intersection

Due to right-of-way constraints, adding lanes to provide additional capacity is not considered feasible. The Caltrans peak-hour volume warrant was analyzed for this intersection (Appendix D), and the results indicate that a signal is warranted for this location under all scenarios. The need to install a traffic signal should not be based solely on a signal warrant(s). Other factors such as driver confusion, The need for a signal at this intersection will be ultimately determined by the City of Los Altos. The level of service at this intersection under Cumulative Conditions with a signal would be LOS C during both peak hours.

The project's contribution to traffic at the Springer Avenue/Cuesta Drive intersection under Cumulative Conditions was calculated. The proposed project is estimated to represent 45 percent and 37 percent of the additional traffic at the Springer Avenue/Cuesta Drive intersection during the AM and PM peak hours, respectively. These percentages were calculated by dividing the number of project trips by the total number of future trips (project trips, pending developments, and regional growth) and no contribution from existing traffic volumes is included.

CHAPTER 6 – OPERATIONAL ISSUES

This chapter discusses other operational issues such as traffic signal warrants, site access, and parking that may affect the transportation system in the vicinity of the project site.

Signal Warrant Analysis

The City of Los Altos' General Plan provides an Implementation Plan to put into action the policies and plans outlined in the General Plan. On page 29 of the Circulation Element C9, subpoint four states, "Consider installation of a traffic signal or other control device (e.g., traffic circle/roundabout) at a stop sign-controlled intersection if one or more of the controlled movements operates at LOS E or F, signal warrants are met to the satisfaction of the Public Works Department, or a safety problem exists." Therefore, signal warrant analyses were conducted at all five unsignalized study intersections based on criteria published in the Caltrans *Traffic Manual* under Existing, Background, Project, and Cumulative Conditions.

When analyzing the unsignalized study intersections, the two-way stop sign controlled intersections of Campbell Avenue/Rosita Avenue and Springer Road/Rosita Avenue reported the worst case movement/approach as the level of service. The level of service for the individual approaches/movements was also evaluated for the all-way stop sign controlled intersections to comply with the Circulation Element. All of the unsignalized intersections operate at an acceptable level of service (LOS D or better) under Existing, Background, Project, and Cumulative Conditions except the Cuesta Drive/Springer Avenue intersection. During the AM peak hour, the eastbound approach operates at LOS E under all scenarios, while the westbound approach operates at LOS E, during the PM peak hour, under Existing, Background, and Project Conditions. Under Cumulative Conditions the level of service deteriorates to LOS F for the westbound approach and LOS E for the eastbound approach in the PM peak hour.

The results of this analysis showed that a traffic signal is warranted based on existing AM peak-hour volumes at the Cuesta Drive/Springer Avenue intersection. The addition of traffic under Background and Project Conditions exacerbates this need based on warrants. The volumes and graphics used to conduct this analysis are presented in Appendix D. The peak-hour volume warrants were not exceeded for any of the other study intersections.

According to guidelines in the Caltrans *Traffic Manual*, the decision to install traffic signals should not be based solely on the satisfaction of warrants. Installation of traffic signals should also be based upon other factors such as delay, congestion, driver confusion, etc. The City of Los Altos will ultimately determine the need for a traffic signal at this location.

Site Access

The project site plan showing the location of the project driveway is shown on Figure 2. This project proposes to provide one driveway on Rosita Avenue directly across from La Prenda Road forming a fourth leg to this intersection. Based on the projected volume on Rosita Avenue and the project-generated traffic, one driveway is sufficient to accommodate the projected volumes.

Parking

There are no standard parking rates for Community Pools. The parking demand for the proposed project was estimated by observing parking demand at an existing facility. The preliminary site plan

shows a possible range of 110 to 126 parking spaces to serve the two pools. In comparison, the Summer Sanders Community Pool (SSAC) in Roseville, California has 100 designated parking spaces, plus 80 overflow spaces in an adjacent dirt lot, plus access to another 75 parking spaces in the adjacent high school for a total of 250 spaces for its three pools. Observations conducted by Fehr & Peers Associates, Inc. at the SSAC indicated that, during typical summer weekdays, the peak parking demand is approximately 125 parked vehicles for their three swimming pools. This results in a rate of 41.7 parking spaces per pool. Using this rate would require the proposed project to provide 84 spaces to accommodate typical weekday parking demand.

The parking lot is also expected to serve the existing uses at Rosita Park. Current users include visitors and organized sports teams that practice on weekday afternoons during the PM peak period (i.e. between 4:00 and 6:00 pm) and play games on weekends. Since the existing gymnasium will be removed prior to construction of the proposed project, no parking demand for that facility was assumed under Project Conditions. According to data provided by the City Recreation Department, the parking demand of vehicles generated by evening practices is estimated to be 24 (four coaches and 20 parents) spaces. It is conservatively estimated that another 5 vehicles could be generated by other visitors to the park during the PM peak hour.

The sum of the project (i.e., pool-generated) demand (84) plus the existing sports use demand (24) plus the other visitor demand (5) yields an estimated total weekday PM peak hour parking demand of 113 spaces. This demand could be accommodated by the proposed maximum supply of 126 spaces.

On weekends during the summer months, the pool facility is conservatively estimated to generate a maximum of up to 115 spaces depending on the number of recreational swimmers after after 12:00 pm. This is the number of spaces needed during the transition between classes as some patrons are arriving before the previous patrons depart. After classes begin, the demand would be reduced. With this estimated peak demand, the remaining supply for park users including sports teams and other visitors may temporarily be as few as 10 spaces. According to information provided by the Parks and Recreation Department, the demand from the sports users could be as high as 75 spaces. Thus, it is possible that the combined pool and Rosita Park parking demand may exceed the proposed supply times at some times on weekend days during summer months depending on pool and park usage. During the fall, winter, and, spring pool usage will be lower and the estimated project parking demand will be substantially lower.

Excessive demand in the project lot could result in parking intrusion into the adjacent neighborhood. Although all of the space on the adjacent streets is public and can be used by anyone, it is strongly desirable to minimize the on-street parking demand of the project in the adjacent neighborhood. Accordingly, it is recommended that all 126 spaces be provided to accommodate not only the typical weekday demand, but also the demand for major pool events and all weekend activities.

Since the demand for the proposed use, as well as for the playfield uses, can vary from weekend to weekend, the pool operator should be required to establish a parking management program (PMP) to reduce the potential for parking intrusion into the adjacent neighborhood. As part of the PMP, the project sponsor should establish an agreement with the Los Altos School District to allow pool event parking in the adjacent Covington School lot to accommodate overflow parking needs during multi-event weekends or major pool events. The PMP would include coordination with organized park users (e.g., baseball and soccer leagues) to determine potential peak days and times for parking. This would result in adjusting the pool schedule to minimize overlap with sporting events in the park. All pool employees should be required to park in the Covington School lot on peak demand days,

and visiting swim teams should also be required to park in this lot if numerous games/events are scheduled at the park. This Covington School lot includes at least 80 additional spaces to accommodate additional demand. If needed, the PMP would also include personnel to re-direct drivers to the Covington School lot should the project lot be at capacity.

While a PMP would help to manage the parking demand, it is acknowledged that some pool or park patrons will park on the adjacent neighborhood streets because of the convenience. This activity is expected in the vicinity of a public park, but drivers of these vehicles are required to obey all traffic laws including not blocking driveways. The PMP should also include coordination with Los Altos Police Department to request periodic enforcement if needed.

CHAPTER 7 - CONCLUSIONS

The proposed Community Pool development is estimated to generate 1,419 daily trips with 124 AM peak-hour trips (59 inbound/65 outbound) and 116 PM peak-hour trips (74 inbound/42 outbound) on a typical non-summer weekday. Daily and PM peak hour project trip generation during the summer months would be higher, the background traffic would be substantially lower, resulting in overall summer volumes that are lower than overall non-summer volumes. The impacts of the added trips on the surrounding roadway system were evaluated following guidelines of the City of Los Altos and the Santa Clara Valley Transportation Authority (VTA) for non-summer weekday conditions.

According to the impact criteria, a project is defined as causing a significant impact if the addition of project traffic causes a signalized intersection to operate LOS E or F or exacerbates LOS E or F operations by increasing the critical movement delay by four or more seconds. The project is also defined as causing a significant impact if the addition of project traffic causes an unsignalized intersection to operate at LOS E or F and it meets the *Caltrans* peak-hour volume warrant. The results of the analysis show that the project development would not have a significant impact on any of the study intersections under near-term project conditions.

With additional growth in traffic volumes, the project would contribute to the degradation of operations at the Springer Avenue/Cuesta Drive intersection under cumulative conditions. A traffic signal would be required to provide acceptable operations under this scenario.

Access to the project is provided via one driveway on Rosita Avenue. No changes to the site plan are recommended. The proposed maximum parking supply of 126 parking spaces should be provided to accommodate the projected parking demand. A parking management plan (PMP) should be implemented to address potential parking issues associated with weekend demand during the summer months. The PMP would help to minimize the potential for neighborhood parking intrusion by establishing an agreement with the Los Altos School District to share parking areas and by maintaining coordination with the Los Altos Police Department to ensure traffic and parking law compliance in the neighborhood.

APPENDIX A

Traffic Counts

APPENDIX B

Level of Service Calculations

APPENDIX C

Trip Generation Memorandum

APPENDIX D

Signal Warrant Analysis