APPENDIX B

800 W. SAN CARLOS STREET
RESIDENTIAL DRAFT TRANSPORTATION IMPACT ANALYSIS

HEXAGON TRANSPORTATION CONSULTANTS, INC.

800 W San Carlos Street Residential

Draft Transportation Impact Analysis

Prepared for:

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Executive Summary

This report presents the results of the Transportation Impact Analysis (TIA) prepared for the proposed mixed-use development located at 800 W. San Carlos Street in San Jose, California. The 4.7-acre site is located on the southeast corner of the Sunol Street and W. San Carlos Street intersection and is currently developed with a commercial building, four warehouses and a shed. As proposed, the project would construct 315 for rent apartment units and 22,665 square feet (s.f.) of commercial space. Access to the site would be provided via W. San Carlos Street and Sunol Street.

This study was conducted for the purpose of identifying potential traffic impacts related to the proposed development. The impacts of the project were evaluated following the standards and methodologies set forth by the City of San Jose. An analysis according to the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program (CMP) guidelines also was prepared, since the project would generate more than 100 peak hour gross vehicle trips. The study determined the traffic impacts of the project on ten signalized intersections and seven freeway segments in the vicinity of the project site during the weekday AM and PM peak periods of traffic.

Project Trip Generation

After applying the City of San Jose trip rates, appropriate trip reductions, and existing site trip credits, the project would generate 2,072 new daily vehicle trips, with 171 new trips occurring during the AM peak hour and 198 new trips occurring during the PM peak hour. Using the inbound/outbound splits recommended by the City of San Jose, the project would produce 63 net inbound and 108 net outbound trips during the AM peak hour, and 126 net inbound and 72 net outbound trips during the PM peak hour.

Intersection Level of Service Analysis

The results of the intersection level of service analysis shows that, measured against the City of San Jose and CMP level of service impact criteria, none of the study intersections would be significantly impacted by the project (see Table ES-1).

Freeway Segments

The results of the freeway segment analysis show that the project would not cause significant increases in traffic volumes (one percent or more of freeway capacity) on any of the study freeway segments currently operating at LOS F, and none of the freeway segments currently operating at LOS E or better would worsen to LOS F as a result of the project (see Table ES-2). Therefore, based on CMP freeway impact criteria, none of the study freeway segments would be significantly impacted by the project.

Other Transportation Issues

The project would not have an adverse effect on existing transit, bicycle or pedestrian facilities in the study area. Site access and on-site circulation would be adequate.

Table ES-1
Intersection Level of Service Summary

Study Number	Intersection	Peak Hour	Count Date	Existing Avg. Delay (sec.)	Existing LOS	Existing+Project Avg. Delay (sec.)	Existing+Project LOS	Background No Project Avg. Delay (sec.)	Background No Project LOS	Background With Project Avg. Delay (sec.)	Background With Project LOS	Incr. In Crit. Delay (sec.)	Incr. In Crit. V/C
1	Meridian Av & San Carlos St	AM	02/14/13	40.2	D	40.2	D	41.5	D	41.6	D	0.1	0.004
		PM	02/14/13	49.5	D	49.7	D	54.3	D	54.9	D	1.2	0.015
2	Race St & San Carlos St	AM	10/23/13	36.4	D	36.3	D	37.8	D	37.8	D	-0.1	0.004
		PM	10/23/13	47.3	D	47.6	D	51.2	D	51.7	D	0.8	0.009
3	Lincoln Av & San Carlos St	AM	10/30/12	33.6	C	33.7	C	36.5	D	36.5	D	0.1	0.004
		PM	10/30/12	40.2	D	40.0	D	43.9	D	43.9	D	0.1	0.008
4	Sunol St & San Carlos St	AM	10/04/12	12.4	B	13.2	B	15.9	B	16.4	B	0.6	0.016
		PM	10/04/12	15.0	B	15.6	B	17.4	B	17.8	B	0.6	0.024
5	Sunol St & Auzerais Av	AM	04/29/14	5.7	A	7.6	A	6.7	A	8.2	A	2.3	0.038
		PM	04/29/14	8.1	A	8.2	A	7.6	A	8.1	A	0.8	0.030
6	Montgomery St & Park Av (SJ)	AM	03/20/13	24.4	C	24.6	C	27.9	C	28.0	C	0.1	0.003
		PM	03/20/13	34.1	C	34.2	C	37.5	D	37.5	D	0.0	0.001
7	Bird Av & San Carlos St (SJ) *	AM	10/03/12	32.7	C	32.7	C	34.3	C	34.3	C	0.0	0.001
		PM	09/18/12	37.4	D	37.5	D	40.2	D	40.3	D	0.2	0.004
8	Bird Av & Auzerais Av (SJ)	AM	09/26/13	19.9	B	20.6	C	22.6	C	23.2	C	0.5	0.007
		PM	09/26/13	24.3	C	25.7	C	31.2	C	32.9	C	2.8	0.034
9	Bird Av & I-280 Ramps (North) *	AM	10/17/12	31.6	C	31.8	C	34.1	C	34.4	C	0.6	0.008
		PM	10/18/12	27.6	C	27.7	C	32.0	C	32.6	C	0.4	0.003
10	Bird Av & I-280 Ramps (South) *	AM	10/17/12	28.6	C	28.9	C	32.2	C	32.5	C	0.3	0.009
		PM	09/18/12	24.9	C	25.0	C	31.8	C	32.1	C	0.5	0.004

Notes:
* Denotes a VTA Congestion Management Program (CMP) intersection.
(SJ) Denotes a City of San Jose exempt downtown core intersection.

Table ES-2
Freeway Segment Level of Service Summary

						Existing Plus Project Trips												Project Trips					
						Mixed-Flow						HOV Lane							Mixed-Flow		HOV Lane		
Freeway	Segment			Direction	Peak Hour	Avg. Speed/a/	# of Lanes	Capacity (vph)	Volume/a/	Density	LOS	Avg. Speed/a/	# of Lanes	Capacity (vph)	Volume/a/	Density	LOS	Total Volume	Volume	% Capacity	Volume	% Capacity	Impact?
SR 87	Alma Av	to	I-280	NB	AM	21	2	4,400	3,414	81.3	F	65	1	1,650	2,021	31.1	D	5	4	0.1%	1	0.1%	*NO*
					PM	66	2	4,400	3,307	25.1	C	70	1	1,650	1,192	17.0	B	9	7	0.2%	2	0.1%	*NO*
SR 87	I-280	to	Julian St	NB	AM	41	2	4,400	4,207	51.3	E	66	1	1,650	1,465	22.2	C	22	17	0.4%	5	0.3%	*NO*
					PM	67	2	4,400	2,009	15.1	B	70	1	1,650	563	8.0	A	12	9	0.2%	3	0.2%	*NO*
SR 87	Julian St	to	I-280	SB	AM	67	2	4,400	2,409	18.1	C	67	1	1,650	413	6.2	A	12	9	0.2%	3	0.2%	*NO*
					PM	20	2	4,400	3,337	83.4	F	70	1	1,650	1,615	23.1	C	22	17	0.4%	5	0.3%	*NO*
SR 87	I-280	to	Alma Av	SB	AM	67	2	4,400	2,407	18.1	C	67	1	1,650	412	6.2	A	9	7	0.2%	2	0.1%	*NO*
					PM	18	2	4,400	3,144	87.3	F	70	1	1,650	1,681	24.0	C	5	4	0.1%	1	0.1%	*NO*
I-280	Winchester Bl	to	I-880	EB	AM	66	3	6,900	5,161	26.1	D	67	1	1,650	944	14.1	B	15	11	0.2%	4	0.2%	*NO*
					PM	52	3	6,900	6,581	42.2	D	70	1	1,650	1,477	21.1	C	28	21	0.3%	7	0.4%	*NO*
I-280	I-880	to	Meridian Av	EB	AM	66	4	9,200	5,321	20.2	C	67	1	1,650	674	10.1	A	15	11	0.1%	4	0.2%	*NO*
					PM	25	3	6,900	5,501	73.3	F	70	1	1,650	2,107	30.1	D	28	21	0.3%	7	0.4%	*NO*
I-280	Meridian Av	to	Bird Av	EB	AM	46	4	9,200	8,657	47.0	E	--	--	--	--	--	--	7	7	0.1%	0	--	*NO*
					PM	28	4	9,200	7,524	67.2	F	--	--	--	--	--	--	14	14	0.2%	0	--	*NO*
I-280	Bird Av	to	SR 87	EB	AM	66	4	9,200	5,821	22.0	C	--	--	--	--	--	--	11	11	0.1%	0	--	*NO*
					PM	21	4	9,200	6,726	80.1	F	--	--	--	--	--	--	6	6	0.1%	0	--	*NO*
I-280	SR 87	to	10th St	EB	AM	66	4	9,200	5,821	22.0	C	--	--	--	--	--	--	11	11	0.1%	0	--	*NO*
					PM	32	4	9,200	7,946	62.1	F	--	--	--	--	--	--	6	6	0.1%	0	--	*NO*
I-280	10th St	to	SR 87	WB	AM	18	4	9,200	6,276	87.2	F	--	--	--	--	--	--	6	6	0.1%	0	--	*NO*
					PM	57	4	9,200	8,912	39.1	D	--	--	--	--	--	--	12	12	0.1%	0	--	*NO*
I-280	SR 87	to	Bird Av	WB	AM	11	4	9,200	4,936	112.2	F	--	--	--	--	--	--	6	6	0.1%	0	--	*NO*
					PM	65	4	9,200	8,072	31.0	D	--	--	--	--	--	--	12	12	0.1%	0	--	*NO*
I-280	Bird Av	to	Meridian Av	WB	AM	13	4	9,200	5,424	104.3	F	--	--	--	--	--	--	14	14	0.2%	0	--	*NO*
					PM	58	4	9,200	8,827	38.0	D	--	--	--	--	--	--	7	7	0.1%	0	--	*NO*
I-280	Meridian Av	to	I-880	WB	AM	7	3	6,900	3,100	147.6	F	27	1	1,650	1,847	68.4	F	27	20	0.3%	7	0.4%	*NO*
					PM	66	3	6,900	5,181	26.2	D	70	1	1,650	1,263	18.0	C	14	11	0.2%	3	0.2%	*NO*
I-280	I-880	to	Winchester Bl	WB	AM	16	3	6,900	4,540	94.6	F	42	1	1,650	2,107	50.2	E	27	20	0.3%	7	0.4%	*NO*
					PM	66	3	6,900	5,321	26.9	D	70	1	1,650	1,473	21.0	C	14	11	0.2%	3	0.2%	*NO*

/a/ Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 2012.

1. Introduction

This report presents the results of the Transportation Impact Analysis (TIA) prepared for the proposed mixed-use development located at 800 W. San Carlos Street in San Jose, California. The 4.7-acre site is located on the southeast corner of the Sunol Street and W. San Carlos Street intersection and is currently developed with a commercial building, four warehouses and a shed. As proposed, the project would construct 315 for rent apartment units and 22,665 square feet (s.f.) of commercial space. Access to the site would be provided via W. San Carlos and Sunol Streets. Figure 1 shows the project site location.

Scope of Study

This study was conducted for the purpose of identifying potential traffic impacts related to the proposed development. The impacts of the project were evaluated following the standards and methodologies set forth by the City of San Jose. An analysis according to the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program (CMP) guidelines also was prepared, since the project would generate more than 100 peak hour gross vehicle trips. The study determined the traffic impacts of the project on ten signalized intersections and seven freeway segments in the vicinity of the project site during the weekday AM and PM peak periods of traffic. The study intersections and freeway segments are identified below. Three study intersections are CMP intersections, as indicated by an asterisk (*).

Study Intersections

1. Meridian Avenue and W. San Carlos Street
2. Race Street and W. San Carlos Street
3. Lincoln Avenue and W. San Carlos Street
4. Sunol Street and W. San Carlos Street
5. Sunol Street and Auzerais Avenue
6. Montgomery Street and Park Avenue
7. Bird Avenue and W. San Carlos Street *
8. Bird Avenue and Auzerais Avenue
9. Bird Avenue and I-280 North Ramps *
10. Bird Avenue and I-280 South Ramps *

Study Freeway Segments

1. SR 87, between Alma Avenue and I-280
2. SR 87, between I-280 and Julian Street
3. I-280, between Winchester Boulevard and I-880
4. I-280, between I-880 and Meridian Avenue
5. I-280, between Meridian Avenue and Bird Avenue
6. I-280, between Bird Avenue and SR 87
7. I-280, between SR 87 and 10th Street

Figure 1
Site Location and Study Intersections

Traffic conditions at the study intersections were analyzed for the weekday AM and PM peak hours of adjacent street traffic. The AM peak hour of adjacent street traffic is generally between 7:00 and 9:00 AM, and the PM peak hour of adjacent street traffic is typically between 4:00 and 6:00 PM. It is during these periods on an average weekday that the most congested traffic conditions occur.

Traffic conditions were evaluated for the following scenarios:

Scenario 1: *Existing Conditions.* Existing traffic volumes were obtained from the City of San Jose, new 2014 manual turning-movement counts, and the 2012 CMP count database. The new intersection count data are included in Appendix A.

Scenario 2: *Existing Plus Project Conditions.* Existing plus project peak hour traffic volumes were estimated by adding to existing traffic volumes the additional traffic generated by the project. Existing plus project conditions were evaluated relative to existing conditions in order to determine the effects the project would have on existing traffic conditions.

Scenario 3: *Background Conditions.* Background traffic volumes were estimated by adding to existing peak hour volumes the projected volumes from approved but not yet completed developments. The added traffic from approved but not yet completed developments was provided by the City of San Jose in the form of the Approved Trips Inventory (ATI).

Scenario 4: *Background Plus Project Conditions.* Projected near-term peak hour traffic volumes with the project were estimated by adding to background traffic volumes the additional traffic generated by the project. Background plus project conditions were evaluated relative to background conditions in order to determine potential project impacts according to the City of San Jose Level of Service Policy.

Scenario 5: *Cumulative Conditions.* Cumulative traffic volumes were obtained from the Diridon Station Area Plan (DSAP) EIR. Cumulative conditions consist of traffic volumes associated with the approved Downtown Strategy 2000 and DSAP projects, plus the addition of traffic associated with the BART extension and High Speed Rail (HSR) projects. For consistency purposes, the proposed project was compared to the amount of development assumed under the DSAP for the same site.

Methodology

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

Data Requirements

The data required for the analysis were obtained from new traffic counts, the City of San Jose, the Santa Clara VTA CMP, and field observations. The following data were collected from these sources:

- existing traffic volumes
- approved project trips
- intersection lane configurations
- signal timing and phasing

Analysis Methodologies and Level of Service Standards

Traffic conditions at the study intersections were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The various analysis methods are described below.

City of San Jose Intersections

The City of San Jose level of service methodology for signalized intersections is the 2000 *Highway Capacity Manual* (HCM) method. This method is applied using the TRAFFIX software. The 2000 HCM operations method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. Since TRAFFIX is also the CMP-designated intersection level of service methodology, the City of San Jose methodology employs the CMP default values for the analysis parameters. The City of San Jose level of service standard for signalized intersections is LOS D or better. The correlation between average control delay and level of service is shown in Table 1.

Table 1
Intersection Level of Service Definitions Based on Average Delay

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

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000) p10-16.

CMP Intersections

The designated level of service methodology for the CMP also is the 2000 HCM operations method for signalized intersections, using TRAFFIX. The only difference in level of service standards is that in the City of San Jose the standard is LOS D or better, and the CMP level of service standard for signalized intersections is LOS E or better.

Intersection Operations

The operations analysis is based on vehicle queuing for high-demand turning-movements at intersections. Vehicle queues are estimated using a Poisson probability distribution, which estimates the probability of “n” vehicles for a vehicle movement using the following formula:

$$P(x=n) = \frac{\lambda^n e^{-(\lambda)}}{n!}$$

where:

P (x=n) = probability of "n" vehicles in queue per lane
n = number of vehicles in the queue per lane
λ = Avg. # of vehicles in queue per lane (vehicles per hr per lane/signal cycles per hr)

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

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

Freeway Segments

As prescribed in the CMP technical guidelines, the level of service for freeway segments is estimated based on vehicle density. Density is calculated by the following formula:

$$D = V / (N*S)$$

where:

D= density, in vehicles per mile per lane (vpmpl)
V= peak hour volume, in vehicles per hour (vph)
N= number of travel lanes
S= average travel speed, in miles per hour (mph)

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

Report Organization

The remainder of this report is divided into seven chapters. Chapter 2 describes existing conditions including the existing roadway network, transit service, and existing bicycle and pedestrian facilities. Chapter 3 presents the intersection operations under existing plus project conditions and describes the method used to estimate project traffic. Chapter 4 presents the intersection operations under background conditions. Chapter 5 presents the intersection operations under background plus project conditions and describes the project's impact on the near-term transportation system. Chapter 6 describes non-level of service operational issues associated with the proposed project. Chapter 7 presents cumulative traffic conditions. Chapter 8 presents the conclusions of the transportation impact analysis.

Table 2
Freeway Level of Service Based on Density

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

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

2. Existing Conditions

This chapter describes the existing conditions for all of the major transportation facilities in the vicinity of the site, including the roadway network, transit service, and bicycle and pedestrian facilities. Also included are the existing levels of service of the key intersections in the study area.

Existing Roadway Network

Regional access to the project site is provided by SR 87 and I-280. Local access to the project site is provided via Meridian Avenue, Race Street, Lincoln Avenue, Sunol Street, Bird Avenue, Park Avenue, San Carlos Street, and Auzerais Avenue. These facilities are described below.

SR 87 is primarily a six-lane freeway (four mixed-flow lanes and two HOV lanes) that is aligned in a north-south orientation within the project vicinity. SR 87 begins at its interchange with SR 85 and extends northward, terminating at its junction with US 101. Access to the project site to and from SR 87 is provided via Auzerais Avenue and Park Avenue.

I-*280* extends from US 101 in San Jose to I-80 in San Francisco. It is generally an east-west oriented eight-lane freeway in the vicinity of downtown San Jose. The section of I-280 just north of the Bascom Avenue over-crossing has six mixed-flow lanes and two high-occupancy-vehicle (HOV) lanes. Access to the project site to and from I-280 is provided via freeway ramps at Parkmoor Avenue, Race Street, Meridian Avenue and Bird Avenue.

Meridian Avenue is a two-to-four-lane north/south arterial that runs from Camden Avenue in South San Jose northward to Park Avenue, where it terminates. Within the study area, Meridian Avenue has a posted speed limit of 35 mph. Meridian Avenue provides access to and from I-280, and provides access to the project site via San Carlos Street.

Race Street is a two-lane roadway extending from The Alameda to just south of I-280, where it becomes Cherry Avenue. The posted speed limit on Race Street is 25 mph north of San Carlos Street, and 30 mph south of San Carlos Street. Race Street has a partial interchange (northbound off-ramp) with I-280 and provides access to the project site via San Carlos Street and Auzerais Avenue.

Lincoln Avenue is a north-south arterial surrounded by a mix of commercial and light industrial land uses in the study area. It extends from Park Avenue south through Willow Glen. Lincoln Avenue consists of four lanes and has a posted speed limit of 35 mph south of San Carlos. Lincoln Avenue consists of two lanes and has a posted speed limit of 25 mph north of San Carlos. Lincoln Avenue provides access to the project site via San Carlos Street and Auzerais Avenue.

Sunol Street is a north-south two-lane road that extends from The Alameda south to Savaker Street near I-280. Sunol Street serves a mix of residential, commercial and light industrial land uses. Sunol Street has a posted speed limit of 25 mph and provides direct access to the project site.

Bird Avenue is a four- to six-lane north-south arterial that provides direct access to I-280. Bird Avenue extends from the Willow Glen area of San Jose to Park Avenue, where it splits into a pair of one-way streets – Montgomery Street (southbound) and Autumn Street (northbound). Bird Avenue has a posted speed limit of 35 mph and provides access to the project site via San Carlos Street and Auzerais Avenue.

Park Avenue is an arterial in the vicinity of the project site providing direct access to SR 87. Park Avenue extends east to west from Market Street to Meridian Avenue where it bends to the north, terminating at Santa Clara University. Between Market Street and Delmas Avenue, Park Avenue consists of four lanes. Park Avenue narrows to two lanes between Delmas Street and Montgomery Street, and widens back to four lanes from Montgomery Street to Sunol Street. Park Avenue consists of two lanes from Sunol Street to its terminus at Santa Clara University. Land uses located along Park Avenue are predominantly residential and commercial. Park Avenue has a posted speed limit of 30 mph and provides access to the site via Sunol Street.

San Carlos Street is an east-west four-lane arterial that extends from San Jose State University westward, ultimately becoming Stevens Creek Boulevard west of Bascom Avenue. Land uses located along San Carlos are generally commercial, with parking provided on both sides of the street in most areas. San Carlos Street is grade separated where it passes over the Southern Pacific Railroad tracks. San Carlos Street has a posted speed limit of 35 mph within the study area and provides direct access to the project site.

Auzerais Avenue is a two-lane arterial that extends east to west from Woz Way to Race Street. Land uses along Auzerais Avenue are residential, commercial and light industrial. The posted speed limit on Auzerais Avenue is 25 mph. Auzerais Avenue provides access to the project site via Sunol Street.

Existing Bicycle and Pedestrian Facilities

Pedestrian facilities consist mostly of sidewalks along the streets in the immediate vicinity of the project site. Crosswalks with pedestrian signal heads and push buttons are located at all of the signalized intersections in the study area. There are some segments of roadway (e.g., Auzerais Avenue between Race Street and Sunol Street) where sidewalks are not continuous or are very narrow. Those roadway segments provide access to commercial and light industrial uses. Overall, the existing network of sidewalks has good connectivity and provides pedestrians with safe routes to transit services and other points of interest in the area.

Only two short segments of roadway in the vicinity of the project site include Class II county-designated bike lanes: Race Street between Auzerais Avenue and Parkmoor Avenue, and Park Avenue between Sunol Street and Montgomery Street. City-designated bike routes also are very limited in the study area. Due to the lack of bicycle lanes on the roadways serving the site, bicyclists should use these roadways with extreme caution. The San Jose Diridon station is located within about 2,000 feet walking distance of the project site, and bicycles are allowed on the LRT trains and Caltrain.

A connection to the northern segment of the Los Gatos Creek Trail system is located just 500 feet east of the project site with access provided via Dupont Street. The off-street trail begins at San Carlos Street and extends south. From San Carlos Street, the Guadalupe River multi-use trail system can be accessed. The Guadalupe River trail system is an 11-mile trail that runs through the City of San Jose along the Guadalupe River and is shared with pedestrians and separated from motor vehicle traffic. The Guadalupe River trail is a continuous Class I bikeway from Curtner Avenue in the south to SR 237 in the north.

Existing Transit Services

Existing transit services in the study area are provided by the VTA, Caltrain, Altamont Commuter Express (ACE), and Amtrak and are described below. The transit stations and local VTA bus lines near the project site are shown on Figure 2.

VTA Light Rail Transit (LRT) Service

The Santa Clara Valley Transportation Authority (VTA) currently operates the 42.2-mile VTA light rail line system extending from south San Jose through downtown to the northern areas of San Jose, Santa Clara, Milpitas, Mountain View and Sunnyvale. The service operates nearly 24-hours a day with 15-minute headways during much of the day.

The Mountain View-Winchester LRT line operates within close proximity of the project site, and provides service between downtown Mountain View, downtown San Jose, and Winchester Boulevard in Campbell. The San Jose Diridon station is located along this LRT line and is served by Caltrain, ACE, and Amtrak. The San Jose Diridon station is located within about 2,000 feet walking distance of the project site.

VTA Bus Service

The VTA bus lines that operate within the study area are listed below in Table 3, including their terminus points, closest scheduled stop, and commute hour headways. Local routes 23, 65 and 81, as well as limited stop route 323, run along San Carlos Street adjacent to the project site. The existing bus stop located on San Carlos Street adjacent to the site, is served by routes 23, 65 and 81.

Table 3
Existing VTA Bus Service

Bus Route	Route Description	Closest Stop	Weekday Hours of Operation	Headway /a/
Local Route 23	DeAnza College to Alum Rock Transit Center	Sunol/San Carlos	5:30am - 1:30am	10 - 15 min
Local Route 63	Almaden Expwy & Camden Av to SJSU	Race/San Carlos	6:15am - 10:25pm	30 min
Local Route 64	Almaden LRT Station to McKee & White via Downtown	Bird/San Carlos	5:30am - 11:20pm	15 - 30 min
Local Route 65	Kooser Rd/Meridian Av to 13th St/Hedding St	Sunol/San Carlos	6:10am - 7:15pm	45 min
Local Route 81	San Jose State University to Vallco Shopping Center	Sunol/San Carlos	6:15am - 9:00pm	30 min
Limited Stop Route 323	Downtown San Jose to De Anza College	Bird/San Carlos	6:20am - 7:20pm	15 min
Hwy 17 Express	Downtown Santa Cruz/Scotts Valley to Downtown SJ	Bird/San Carlos	4:45am - 11:35pm	10 - 30 min

Notes:
/a/ Approximate headways during commute periods.

Caltrain Service

The San Jose Diridon Station is located approximately 2,000 feet from the project site and is served by Caltrain. Caltrain provides commuter rail service between San Francisco and Gilroy, and currently operates 86 trains that carry about 42,350 riders on an average weekday. The Diridon station provides 581 parking spaces, as well as 18 bike racks and 48 bike lockers. Trains stop frequently at the Diridon station between 4:30 AM and 10:30 PM in the northbound direction, and between 6:26 AM and 1:32 AM in the southbound direction. Caltrain provides passenger train service seven days a week, and provides extended service to Morgan Hill and Gilroy during commute hours.

Altamont Commuter Express Service

The Altamont Commuter Express (ACE) provides commuter passenger train service across the Altamont between Stockton and San Jose during the weekdays. ACE stops at the San Jose Diridon station four times during both the morning and evening commute hours.

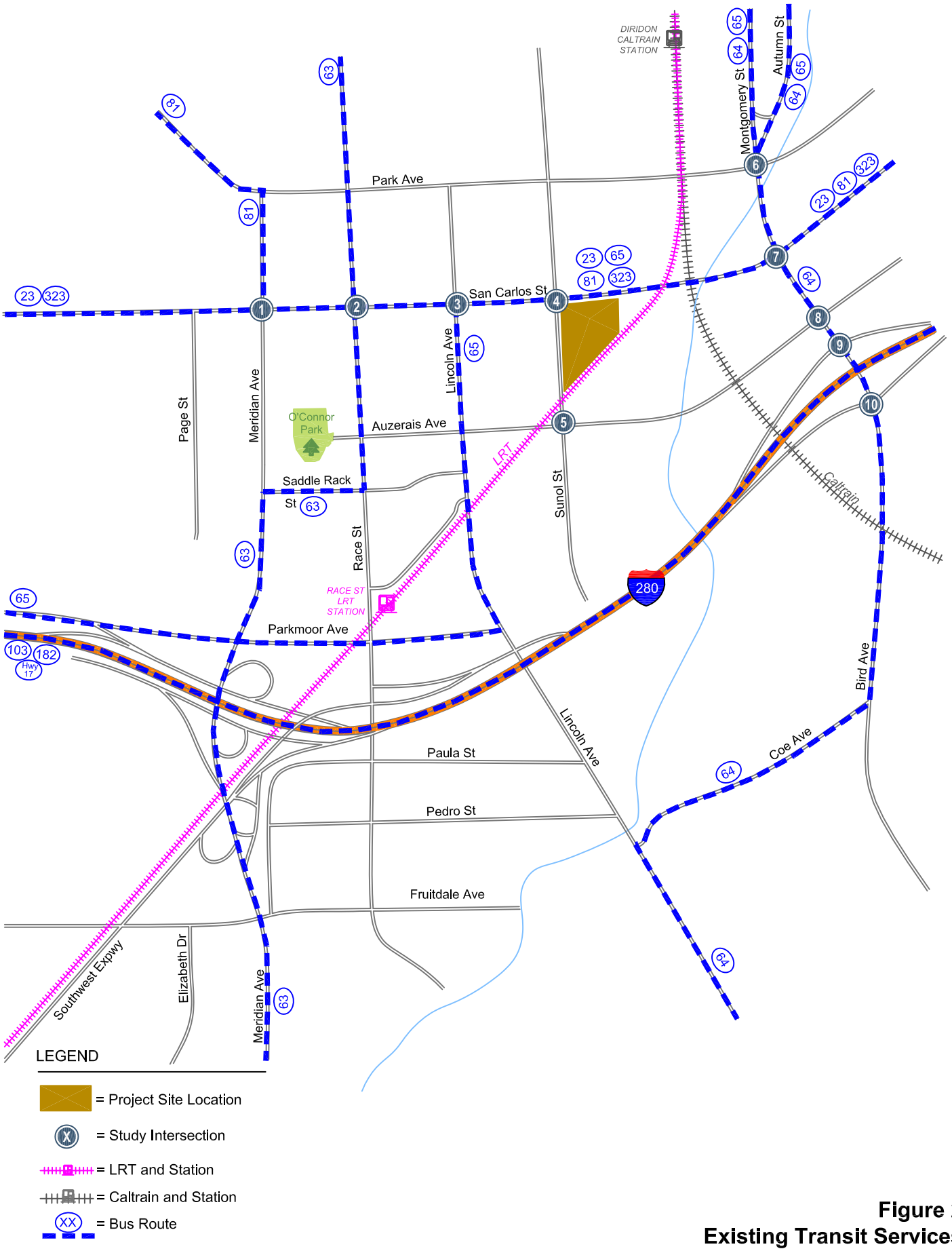


Figure 2
Existing Transit Services

Amtrak Service

Amtrak provides daily commuter passenger train service along the 170-mile Capitol Corridor between the Sacramento region and the Bay Area, with stops in San Jose, Santa Clara, Fremont, Hayward, Oakland, Emeryville, Berkeley, Richmond, Martinez, Suisun City, Davis, Sacramento, Roseville, Rocklin, and Auburn. The Capitol Corridor trains stop at the San Jose Diridon station eight times during the weekdays between approximately 7:40 AM and 11:55 PM in the westbound direction. In the eastbound direction, Amtrak stops at the Diridon station seven times during the weekdays between 6:40 AM and 7:15 PM.

Existing Intersection Lane Configurations

The existing lane configurations at the study intersections were confirmed by observations in the field and are shown on Figure 3.

Existing Traffic Volumes

Existing weekday AM (7:00-9:00 AM) and PM (4:00-6:00 PM) peak hour traffic volumes were obtained from manual turning-movement counts conducted in 2012 and 2013. Most of the counts used in this traffic study have been reviewed and approved by the City of San Jose. Recent 2014 counts conducted at the intersection of Sunol Street and Auzerais Avenue have not yet been approved by City staff. These counts are currently under review.

The existing peak hour traffic volumes are shown graphically on Figure 4. New 2014 count data are included in Appendix A.

Existing Intersection Levels of Service

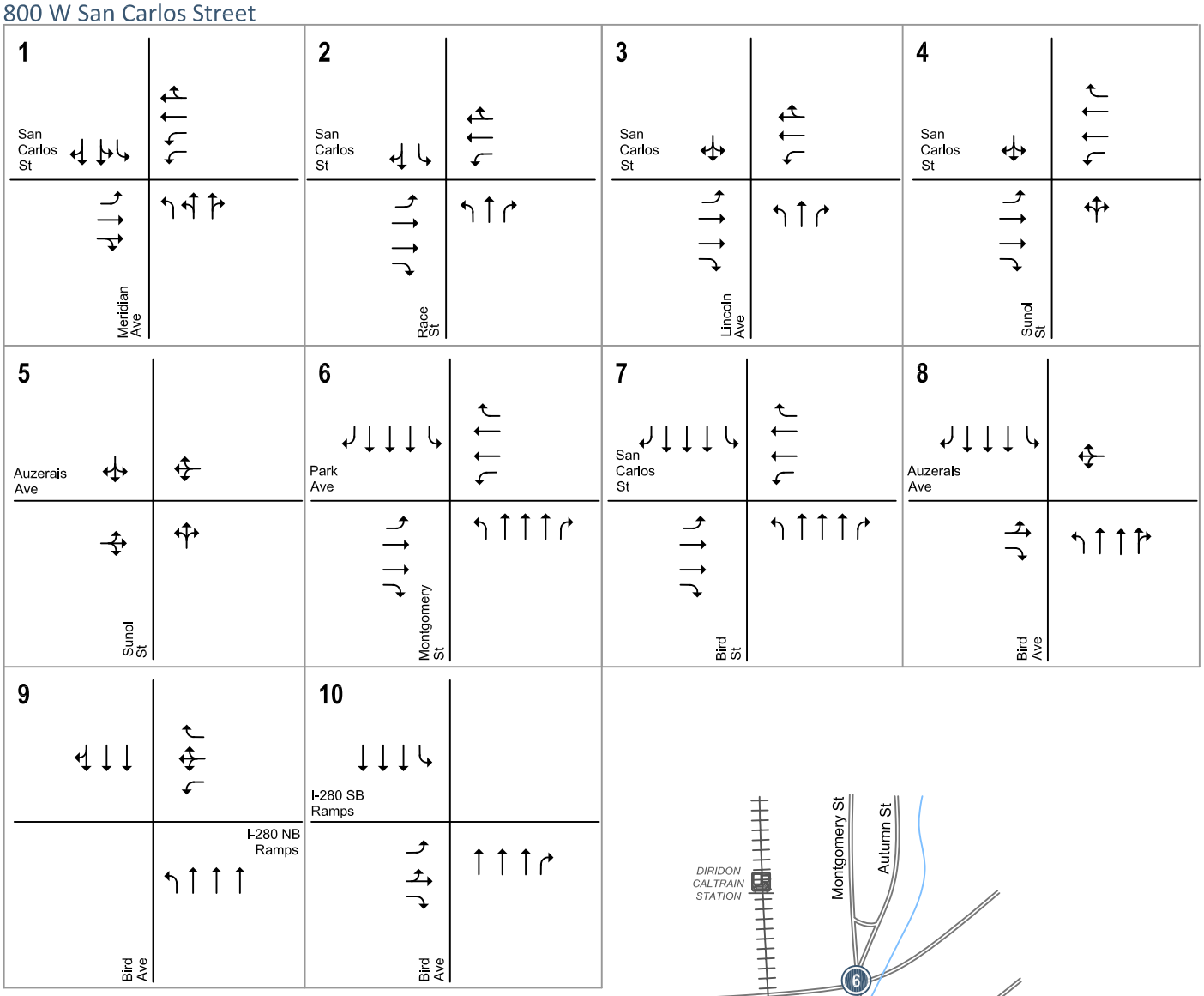
The results of the intersection level of service analysis show that, measured against the City of San Jose and CMP level of service standards, all of the study intersections currently operate at an acceptable level of service during both the AM and PM peak hours of traffic.

The results of the intersection level of service analysis under existing conditions are summarized in Table 4. The intersection level of service calculation sheets are included in Appendix D.

Existing Freeway Levels of Service

Traffic volumes for the study freeway segments were obtained from the 2012 CMP Annual Monitoring Report, which contains the most recent data collected for freeway segments located in Santa Clara County. The results of the analysis are summarized in Table 5. The results show that the following directional freeway segments currently operate at an unacceptable LOS F:

- SR 87, northbound between Alma Avenue and I-280 – AM peak hour
- SR 87, southbound between Julian Street and I-280 – PM peak hour
- SR 87, southbound between I-280 and Alma Avenue – PM peak hour
- I-280, eastbound between I-880 and Meridian Avenue – PM peak hour
- I-280, eastbound between Meridian Avenue and Bird Avenue – PM peak hour
- I-280, eastbound between Bird Avenue and SR 87 – PM peak hour
- I-280, eastbound between SR 87 and Tenth Street – PM peak hour
- I-280, westbound between Tenth Street and SR 87 – AM peak hour
- I-280, westbound between SR 87 and Bird Avenue – AM peak hour
- I-280, westbound between Bird Avenue and Meridian Avenue – AM peak hour
- I-280, westbound between Meridian Avenue and I-880 – AM peak hour
- I-280, westbound between I-880 and Winchester Boulevard – AM peak hour



LEGEND

= Project Site Location

= Study Intersection

Figure 3
Existing Lane Configurations

HEXAGON

NORTH
Not to Scale

800 W San Carlos Street

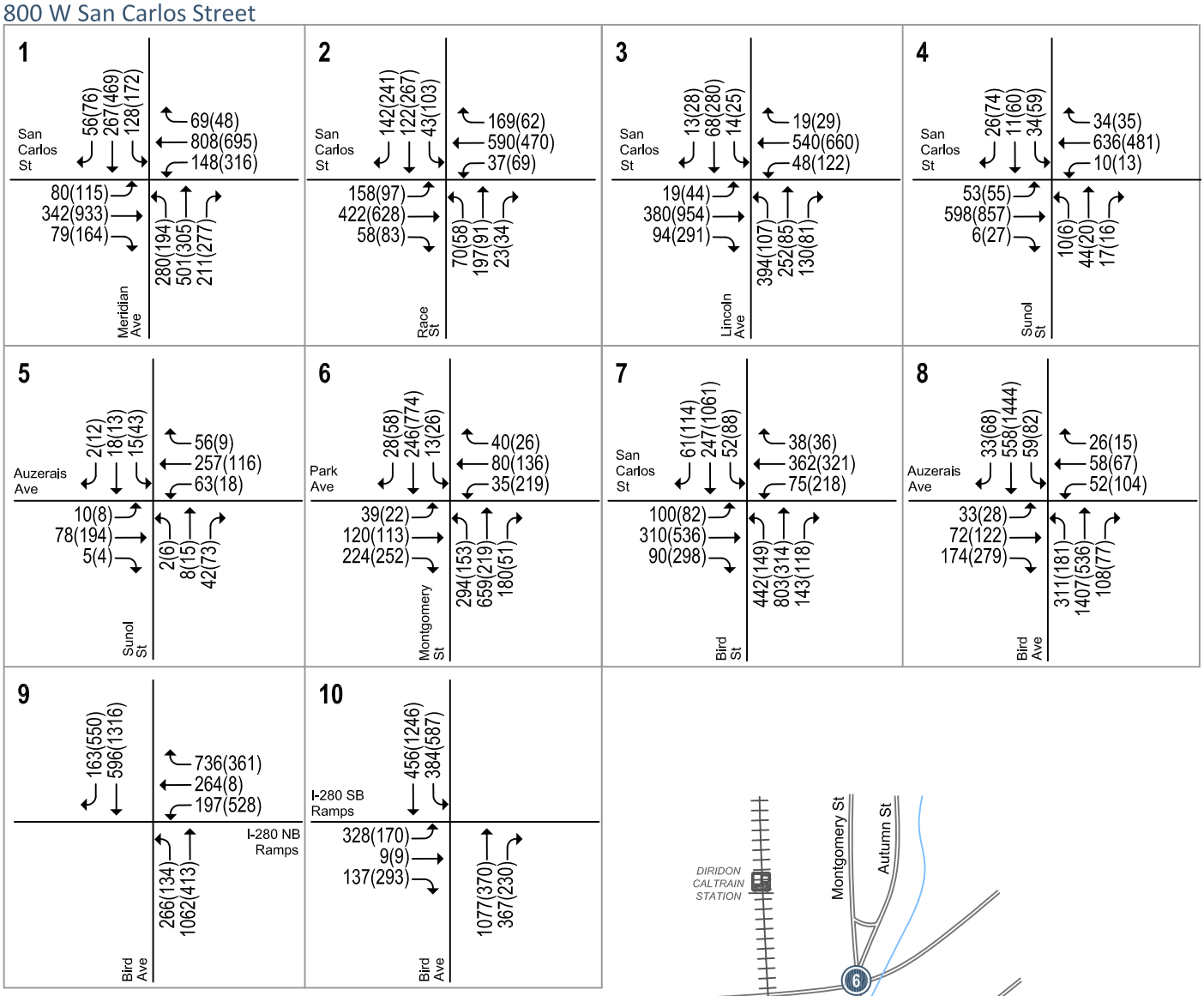


Figure 4
Existing Traffic Volumes

HEXAGON

Table 4
Existing Intersection Levels of Service

Study Number	Intersection	Peak Hour	Count Date	Avg. Delay (sec.)	LOS
1	Meridian Av & San Carlos St	AM	02/14/13	40.2	D
		PM	02/14/13	49.5	D
2	Race St & San Carlos St	AM	10/23/13	36.4	D
		PM	10/23/13	47.3	D
3	Lincoln Av & San Carlos St	AM	10/30/12	33.6	C
		PM	10/30/12	40.2	D
4	Sunol St & San Carlos St	AM	10/04/12	12.4	B
		PM	10/04/12	15.0	B
5	Sunol St & Auzerais Av	AM	04/29/14	5.7	A
		PM	04/29/14	8.1	A
6	Montgomery St & Park Av (SJ)	AM	03/20/13	24.4	C
		PM	03/20/13	34.1	C
7	Bird Av & San Carlos St (SJ) *	AM	10/03/12	32.7	C
		PM	09/18/12	37.4	D
8	Bird Av & Auzerais Av (SJ)	AM	09/26/13	19.9	B
		PM	09/26/13	24.3	C
9	Bird Av & I-280 Ramps (North) *	AM	10/17/12	31.6	C
		PM	10/18/12	27.6	C
10	Bird Av & I-280 Ramps (South) *	AM	10/17/12	28.6	C
		PM	09/18/12	24.9	C

Notes:
* Denotes a VTA Congestion Management Program (CMP) intersection.
(SJ) Denotes a City of San Jose exempt downtown core intersection.

Observed Existing Traffic Conditions

Traffic conditions were observed in the field to identify existing operational deficiencies and to confirm the accuracy of calculated levels of service. The purpose of this effort was (1) to identify any existing traffic problems that may not be directly related to level of service, and (2) to identify any locations where the level of service analysis does not accurately reflect actual existing traffic conditions.

AM and PM field observations revealed that overall the study intersections operate well, and the level of service calculations accurately reflect existing conditions. However, field observations revealed that some minor operational problems currently occur that may not be reflected in the intersection level of service calculations, as indicated below.

Sunol Street and Auzerais Avenue

Long wait times periodically occur at this intersection due to the LRT train preemption. However, this intersection experiences low traffic volumes and queuing issues were not observed.

Montgomery Street and Park Avenue

The westbound left-turn pocket is short and vehicles spill out of the turn pocket on occasion during the PM peak hour. However, all of the vehicles in the queue clear the intersection in one signal cycle. During the AM peak hour, the northbound left-turn vehicle queue also occasionally spills out of the turn pocket. However, all of the queued vehicles clear most of the time.

Bird Avenue and San Carlos Street

During the AM peak hour, the northbound left turn vehicle queues frequently spill out of the turn pocket. When this occurs, the queued vehicles clear the intersection in one signal cycle about half of the time.

Table 5
Existing Freeway Segment Levels of Service

						Mixed-Flow Lanes					HOV Lane				
Freeway	Segment			Direction	Peak Hour	Avg. Speed/a/	# of Lanes	Volume/a/	Density	LOS	Avg. Speed/a/	# of Lanes	Volume/a/	Density	LOS
SR 87	Alma Av	to	I-280	NB	AM	21	2	3,410	81.2	F	65	1	2,020	31.1	D
					PM	66	2	3,300	25.0	C	70	1	1,190	17.0	B
SR 87	I-280	to	Julian St	NB	AM	41	2	4,190	51.1	E	66	1	1,460	22.1	C
					PM	67	2	2,000	15.0	B	70	1	560	8.0	A
SR 87	Julian St	to	I-280	SB	AM	67	2	2,400	18.0	C	67	1	410	6.1	A
					PM	20	2	3,320	83.0	F	70	1	1,610	23.0	C
SR 87	I-280	to	Alma Av	SB	AM	67	2	2,400	18.0	C	67	1	410	6.1	A
					PM	18	2	3,140	87.2	F	70	1	1,680	24.0	C
I-280	Winchester Bl	to	I-880	EB	AM	66	3	5,150	26.0	D	67	1	940	14.0	B
					PM	52	3	6,560	42.1	D	70	1	1,470	21.0	C
I-280	I-880	to	Meridian Av	EB	AM	66	4	5,310	20.1	C	67	1	670	10.0	A
					PM	25	3	5,480	73.1	F	70	1	2,100	30.0	D
I-280	Meridian Av	to	Bird Av	EB	AM	46	4	8,650	47.0	E	--	--	--	--	--
					PM	28	4	7,510	67.1	F	--	--	--	--	--
I-280	Bird Av	to	SR 87	EB	AM	66	4	5,810	22.0	C	--	--	--	--	--
					PM	21	4	6,720	80.0	F	--	--	--	--	--
I-280	SR 87	to	10th St	EB	AM	66	4	5,810	22.0	C	--	--	--	--	--
					PM	32	4	7,940	62.0	F	--	--	--	--	--
I-280	10th St	to	SR 87	WB	AM	18	4	6,270	87.1	F	--	--	--	--	--
					PM	57	4	8,900	39.0	D	--	--	--	--	--
I-280	SR 87	to	Bird Av	WB	AM	11	4	4,930	112.0	F	--	--	--	--	--
					PM	65	4	8,060	31.0	D	--	--	--	--	--
I-280	Bird Av	to	Meridian Av	WB	AM	13	4	5,410	104.0	F	--	--	--	--	--
					PM	58	4	8,820	38.0	D	--	--	--	--	--
I-280	Meridian Av	to	I-880	WB	AM	7	3	3,080	146.7	F	27	1	1,840	68.1	F
					PM	66	3	5,170	26.1	D	70	1	1,260	18.0	B
I-280	I-880	to	Winchester Bl	WB	AM	16	3	4,520	94.2	F	42	1	2,100	50.0	E
					PM	66	3	5,310	26.8	D	70	1	1,470	21.0	C

/a/ Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 2012.

Bird Avenue at Auzerais Avenue and I-280 Freeway Ramps

The Bird Avenue/Auzerais Avenue and Bird Avenue/I-280 interchange signals are coordinated and operate adequately most of the day. Most vehicles clear the series of three intersections in one signal cycle length. However, two cycles are often needed in the AM for all vehicles on the I-280 northbound off-ramp to exit the ramp due to the close proximity of the off-ramp to Auzerais Avenue. In addition, there is a relatively high volume of vehicles exiting northbound I-280 at Bird Street and getting right back on the freeway to avoid the backup on northbound I-280. As a result, those vehicles (westbound through movement) are stealing off-ramp capacity away from the westbound left-turn movement and, more importantly, the high volume right-turn movement. Note that the middle lane on the off-ramp has a shared left/through/right configuration. Note also that although the I-280 northbound on-ramp is metered in the PM, it does not back up to Bird Avenue.

During the PM peak hour, the southbound left-turn vehicle queue at the Bird Avenue/I-280 southbound on-ramp intersection extends back through the Bird Avenue/Auzerais Avenue intersection due to the high-demand southbound left-turn movement and the metering light on the I-280 southbound on-ramp. As a result, it often takes two signal cycles for all of the vehicles to clear the intersection. Also during the PM peak hour, the southbound left-turn vehicle queues at the Bird Avenue/Auzerais Avenue intersection often spill out of the left-turn pocket. Consequently, two signal cycles are usually needed for all of the vehicles to clear the intersection.

3.
Existing Plus Project Conditions

This chapter describes existing plus project traffic conditions, including the method by which project traffic is estimated. Existing plus project traffic conditions could potentially occur if the project were to be occupied prior to the other approved projects in the area. It is unlikely that this traffic condition would occur, since other approved projects expected to add traffic to the study area would likely be built and occupied during the time the project is going through the development review process.

Transportation Network Under Existing Plus Project Conditions

It is assumed in this analysis that the transportation network under existing plus project conditions would be the same as the existing transportation network.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the site is estimated for the AM and PM peak hours. As part of the project trip distribution, an estimate is made of the directions to and from which the project trips would travel. In the project trip assignment, the project trips are assigned to specific streets. These procedures are described further in the following sections.

Trip Generation

Trips generated by any new development can be estimated based on counts of existing development of the same land use type. The City of San Jose has used count data of existing development that has been collected over the years to derive a list of trip generation rates for the most common land uses. The trip generation rates that have been developed can be applied to new development within the City to help predict future traffic increases that would result from new development. These recommended rates are detailed in the *San Jose Traffic Impact Analysis Handbook*, November 2009. Therefore, trip generation resulting from new development proposed within the City of San Jose typically is estimated by multiplying the City's established trip generation rates by the size of the development.

Trip Reductions

Based on the Santa Clara VTA TIA Guidelines, March 2009, the project qualifies for two trip reductions: a transit reduction and a mixed-use development reduction. Since the project would be located within 2,000 feet of a major transit facility (San Jose Diridon Station), a 9 percent trip reduction can be applied to the residential component of the project. In addition, since the project would consist of a mix of residential and retail uses, a 15 percent trip reduction can be applied (to the smaller trip generator) to account for the internalization of trips between the two land use components of the project.

A retail pass-by trip reduction of 25 percent (typical for Santa Clara County) also can be applied to the net peak hour trip generation estimates for the proposed retail space. Pass-by-trips are trips that would already be on the adjacent roadways (and so are already counted in the background traffic) but would turn into the site while passing by. Justification for applying the pass-by-trip reduction is founded on the observation that such retail traffic is not actually generated by the retail development, but is already part of the ambient traffic levels.

Existing Uses

Trips that are generated by existing occupied uses can be subtracted from the gross project trip generation estimates. The existing uses on the site are 100 percent occupied and are generating traffic. Thus, the project can receive trip credits for this existing uses. The site driveways were counted on May 6, 2014 during the AM and PM peak hours.

Net Project Trips

After applying the City of San Jose trip rates, appropriate trip reductions, and existing site trip credits, the project would generate 2,072 new daily vehicle trips, with 171 new trips occurring during the AM peak hour and 198 new trips occurring during the PM peak hour. Using the inbound/outbound splits recommended by the City of San Jose, the project would produce 63 net inbound and 108 net outbound trips during the AM peak hour, and 126 net inbound and 72 net outbound trips during the PM peak hour. Table 6 shows the project trip generation estimates.

Table 6
Project Trip Generation Estimates

Land Use	Size	Daily Rate	Daily Trips	AM Peak Hour Pk-Hr Rate	AM In	AM Out	AM Total	PM Peak Hour Pk-Hr Rate	PM In	PM Out	PM Total
Proposed Uses											
Apartments [1]	315 units	6.0	1,890	0.6	66	123	189	0.6	123	66	189
Commercial [2]	22,665 s.f.	40.0	907	1.2	19	8	27	3.6	41	41	82
Gross Project Trips:			*2,797*		*85*	*131*	*216*		*164*	*107*	*271*
Trip Reductions											
Mixed-use Reduction [3]			(272)		(4)	(4)	(8)		(12)	(12)	(24)
Transit Reduction [4]			(170)		(6)	(11)	(17)		(11)	(6)	(17)
Pass-by Reduction [5]			(63)		(1)	(1)	(2)		(3)	(3)	(6)
Subtotal:			**2,292**		**74**	**115**	**189**		**138**	**86**	**224**
Existing Uses											
Existing Site Trips [6]			(220)		(11)	(7)	(18)		(12)	(14)	(26)
Net New Trips:			**2,072**		**63**	**108**	**171**		**126**	**72**	**198**

Notes:
[1] Based on "Apartments" rates contained in the *San Jose TIA Handbook* , November 2009.
[2] Based on "Specialty Retail/Strip Commercial" rates contained in the *San Jose TIA Handbook* , November 2009.
[3] A 15% residential/retail mixed-use trip reduction was applied to the project per the Santa Clara VTA TIA Guidelines, March 2009. The 15% trip reduction was first applied to the smaller trip generator (retail). The same number of trips were then subtracted from the larger trip generator (residential) to account for both trip ends.
[4] A 9% transit reduction was applied to the residential component of the project, since the project site is located within 2,000 feet of an LRT station. (Santa Clara VTA TIA Guidelines, March 2009)
[5] A pass-by trip reduction of 25% was applied to the 2,690 SF retail and 4,700 SF restaurant components of the project only. The reduction was applied to the net retail and restaurant trips after applying the mixed-use reduction.
[6] Existing AM and PM peak hour trips based on driveway counts conducted 5/6/2014. Daily trips were estimated.

Trip Distribution Pattern and Trip Assignment

The trip distribution pattern for the project was developed based on existing travel patterns on the surrounding roadway system and the locations of complementary land uses. The peak hour vehicle trips generated by the project were assigned to the roadway network in accordance with the trip distribution pattern, with an emphasis on freeway access and project driveway locations. Figure 5 shows the project trip distribution patterns. Figure 6 shows the project gross trip assignment.

Existing Plus Project Traffic Volumes

The project trips were added to existing traffic volumes to obtain existing plus project traffic volumes (see Figure 7). Traffic volumes for all components of traffic are tabulated in Appendix C.

Intersection Levels of Service Under Existing Plus Project Conditions

The results of the intersection level of service analysis under existing plus project conditions show that, measured against the City of San Jose and CMP level of service standards, all of the study intersections would operate at an acceptable level of service during both the AM and PM peak hours of traffic (see Table 7). The intersection level of service calculation sheets are included in Appendix D.

Table 7
Existing Plus Project Intersection Levels of Service

Study Number	Intersection	Peak Hour	Existing		Existing + Project	
			Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
1	Meridian Av & San Carlos St	AM	40.2	D	40.2	D
		PM	49.5	D	49.7	D
2	Race St & San Carlos St	AM	36.4	D	36.3	D
		PM	47.3	D	47.6	D
3	Lincoln Av & San Carlos St	AM	33.6	C	33.7	C
		PM	40.2	D	40.0	D
4	Sunol St & San Carlos St	AM	12.4	B	13.2	B
		PM	15.0	B	15.6	B
5	Sunol St & Auzerais Av	AM	5.7	A	7.6	A
		PM	8.1	A	8.2	A
6	Montgomery St & Park Av (SJ)	AM	24.4	C	24.6	C
		PM	34.1	C	34.2	C
7	Bird Av & San Carlos St (SJ) *	AM	32.7	C	32.7	C
		PM	37.4	D	37.5	D
8	Bird Av & Auzerais Av (SJ)	AM	19.9	B	20.6	C
		PM	24.3	C	25.7	C
9	Bird Av & I-280 Ramps (North) *	AM	31.6	C	31.8	C
		PM	27.6	C	27.7	C
10	Bird Av & I-280 Ramps (South) *	AM	28.6	C	28.9	C
		PM	24.9	C	25.0	C

Notes:
* Denotes a VTA Congestion Management Program (CMP) intersection.
(SJ) Denotes a City of San Jose exempt downtown core intersection.

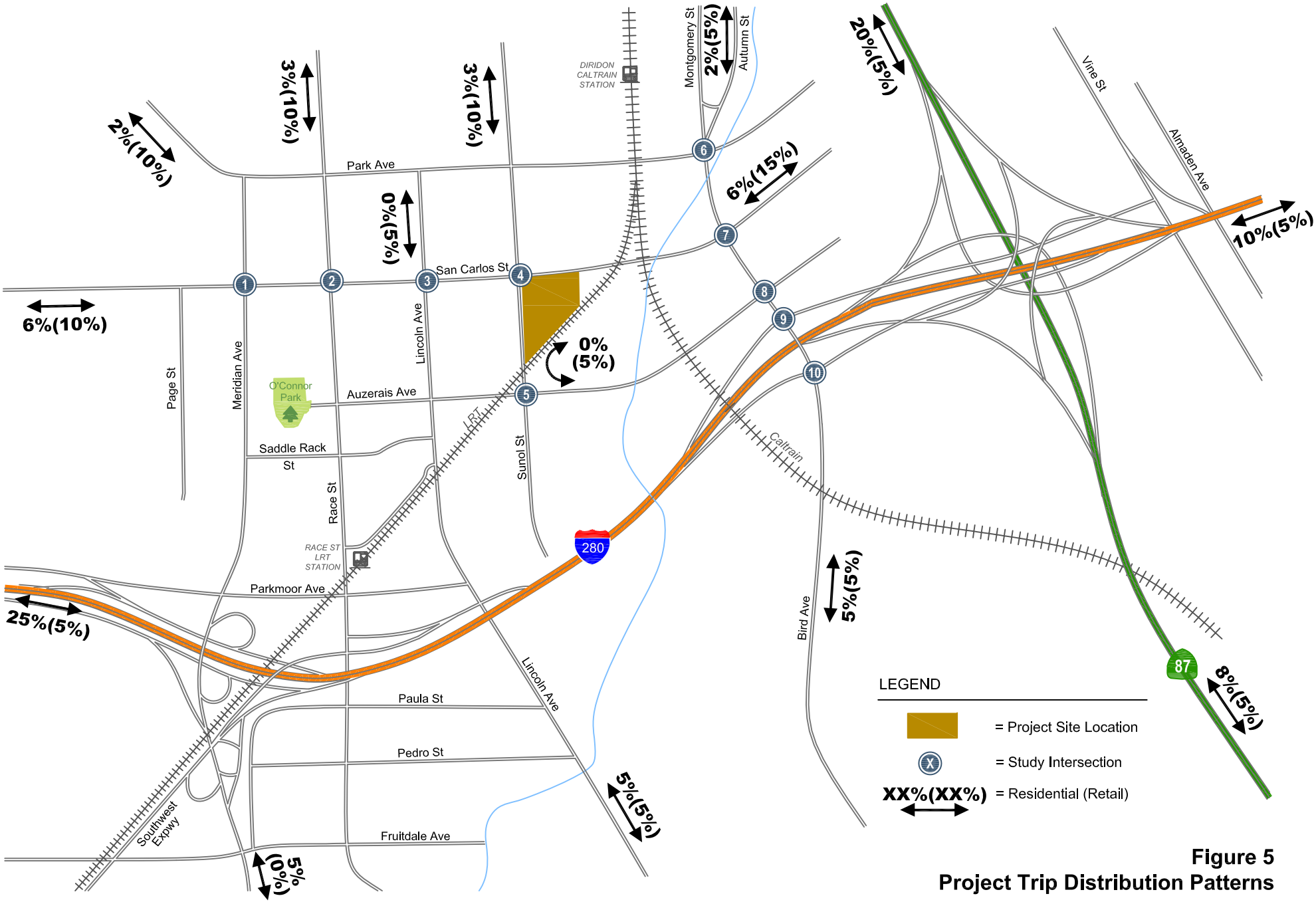
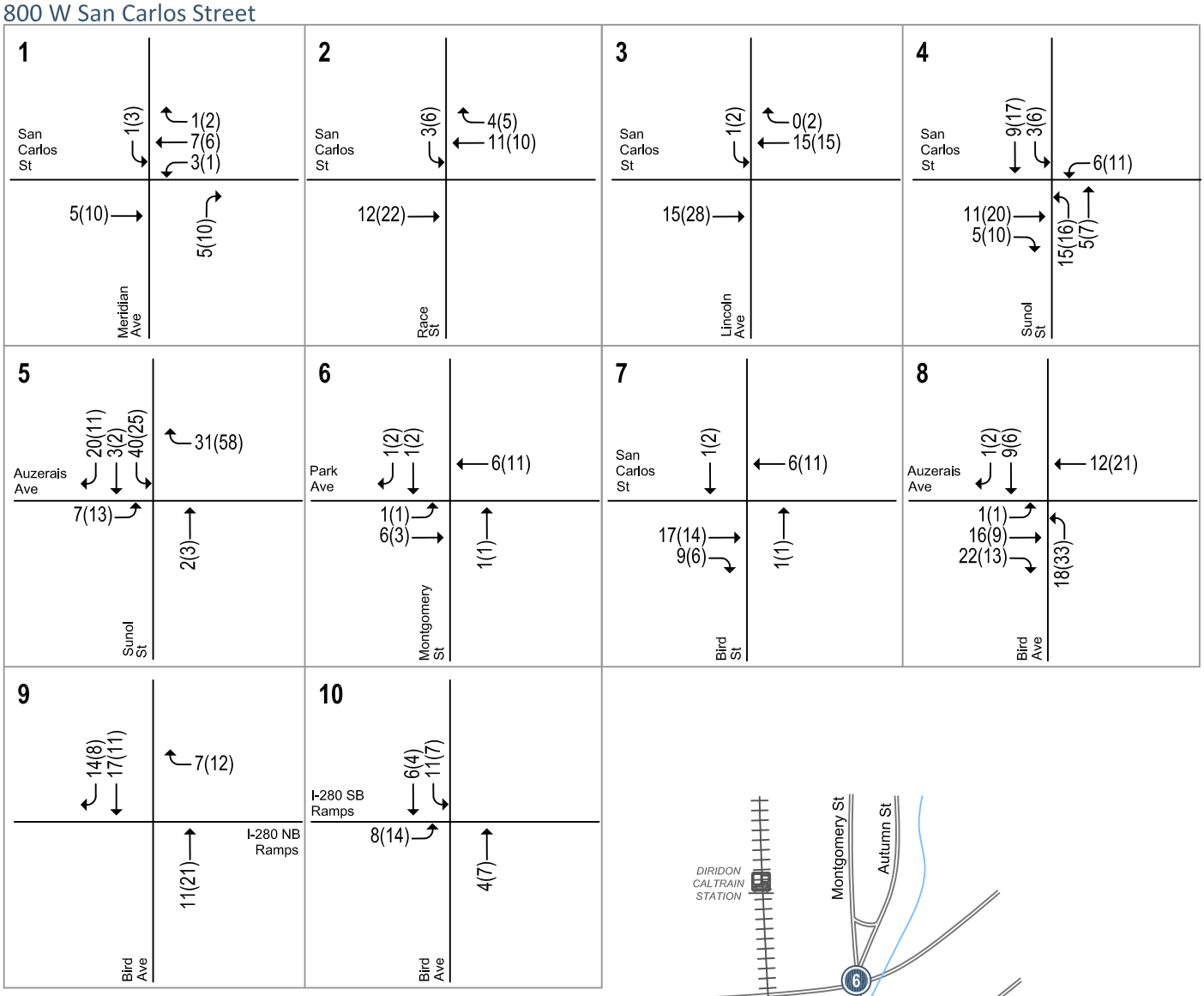


Figure 5
Project Trip Distribution Patterns

800 W San Carlos Street



LEGEND

= Project Site Location

X = Study Intersection

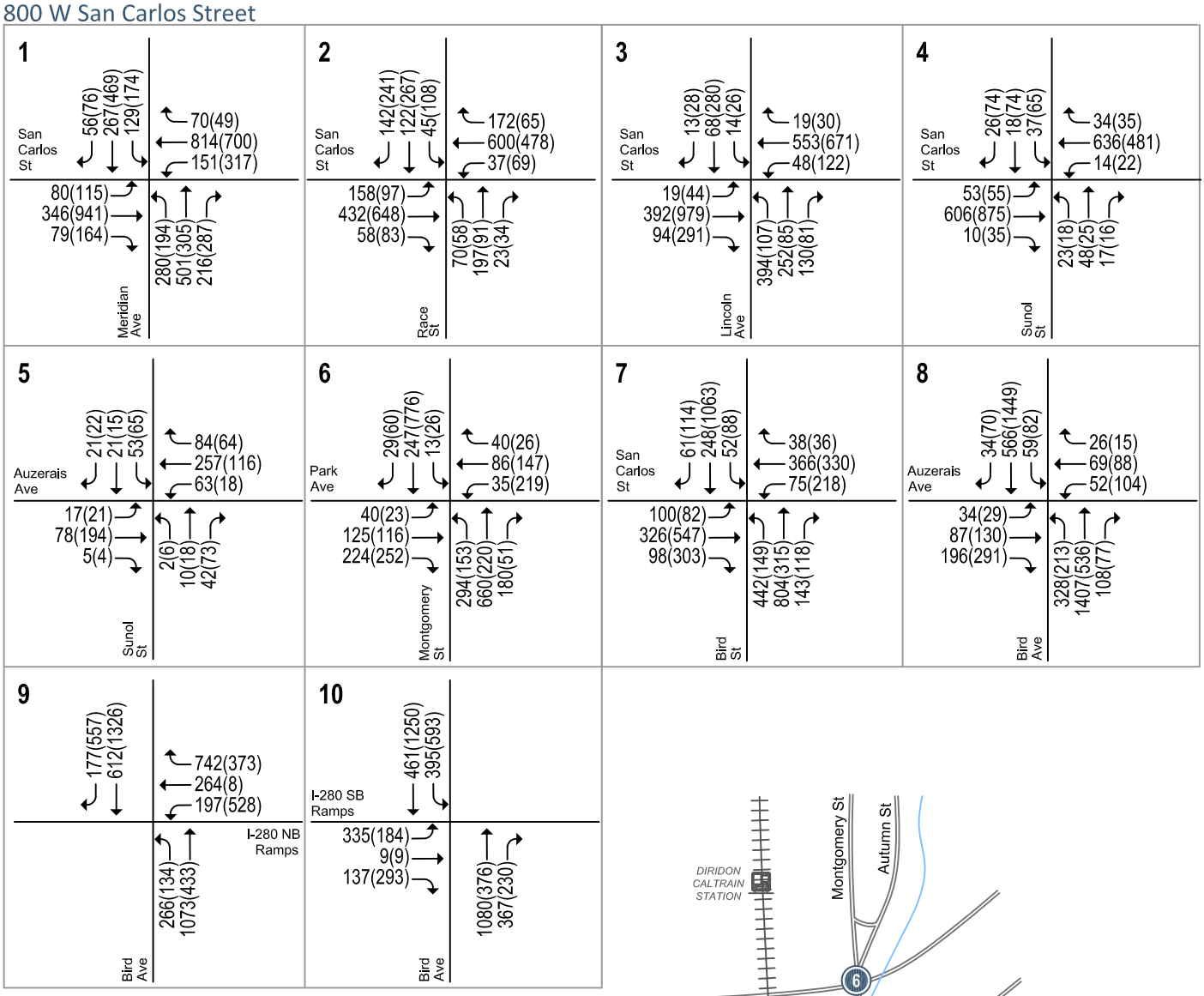
XX(XX) = AM(PM) Peak-Hour Trips

Figure 6
Gross Project Trip Assignment

HEXAGON

NORTH
Not to Scale

800 W San Carlos Street



LEGEND

= Project Site Location

X = Study Intersection

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 7
Existing Plus Project Traffic Volumes

HEXAGON

NORTH
Not to Scale

4. Background Conditions

This chapter presents background traffic conditions, which are defined as conditions just prior to completion of the proposed project. Traffic volumes for background conditions comprise volumes from existing traffic counts plus traffic generated by other approved developments in the vicinity of the site. This chapter describes the procedure used to determine background traffic volumes and the resulting traffic conditions. The background scenario predicts a realistic traffic condition that would occur as approved development gets built and occupied.

Background Transportation Network

It was assumed in this analysis that the transportation network under background conditions would be the same as the existing network.

Background Traffic Volumes

Background peak hour traffic volumes were estimated by adding to existing peak hour volumes the estimated traffic from approved but not yet constructed developments. The added traffic from approved but not yet constructed developments in the City of San Jose was obtained from the City's Approved Trips Inventory (ATI). Background traffic volumes are shown graphically on Figure 8.

The ATI is contained in Appendix B. Traffic volumes for all components of traffic are tabulated in Appendix C.

Intersection Levels of Service Under Background Conditions

The results of the intersection level of service analysis under background conditions are shown in Table 8. The results show that, measured against the City of San Jose and CMP level of service standards, all of the study intersections would operate at an acceptable level of service during both the AM and PM peak hours of traffic under background conditions. The intersection level of service calculation sheets are included in Appendix D.

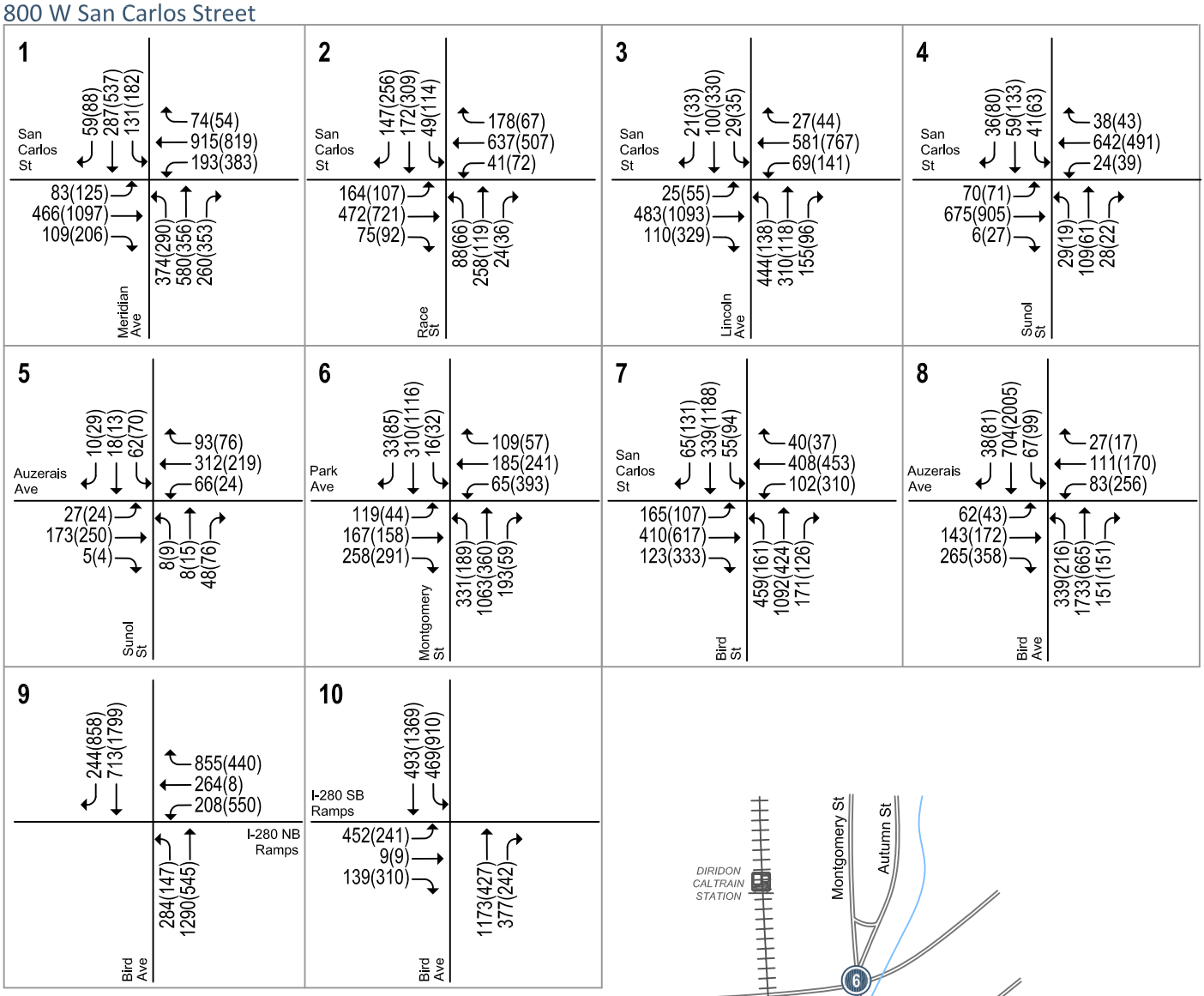


Figure 8
Background Traffic Volumes

Table 8
Background Intersection Levels of Service

Study Number	Intersection	Peak Hour	Existing Avg. Delay (sec.)	Existing LOS	Background Avg. Delay (sec.)	Background LOS
1	Meridian Av & San Carlos St	AM	40.2	D	41.5	D
		PM	49.5	D	54.3	D
2	Race St & San Carlos St	AM	36.4	D	37.8	D
		PM	47.3	D	51.2	D
3	Lincoln Av & San Carlos St	AM	33.6	C	36.5	D
		PM	40.2	D	43.9	D
4	Sunol St & San Carlos St	AM	12.4	B	15.9	B
		PM	15	B	17.4	B
5	Sunol St & Auzerais Av	AM	5.7	A	6.7	A
		PM	8.1	A	7.6	A
6	Montgomery St & Park Av (SJ)	AM	24.4	C	27.9	C
		PM	34.1	C	37.5	D
7	Bird Av & San Carlos St (SJ) *	AM	32.7	C	34.3	C
		PM	37.4	D	40.2	D
8	Bird Av & Auzerais Av (SJ)	AM	19.9	B	22.6	C
		PM	24.3	C	31.2	C
9	Bird Av & I-280 Ramps (North) *	AM	31.6	C	34.1	C
		PM	27.6	C	32	C
10	Bird Av & I-280 Ramps (South) *	AM	28.6	C	32.2	C
		PM	24.9	C	31.8	C

Notes:
* Denotes a VTA Congestion Management Program (CMP) intersection.
(SJ) Denotes a City of San Jose exempt downtown core intersection.

5.
Background Plus Project Conditions

This chapter describes near-term traffic conditions that most likely would occur when the project is complete. It includes a description of the City of San Jose significance criteria used to establish what constitutes a project impact, the method by which project traffic is estimated, and any impacts caused by the project. Background plus project conditions were evaluated relative to background conditions in order to determine potential project impacts. This traffic scenario represents a more congested traffic condition than the existing plus project scenario, since it includes traffic generated by approved but not yet built projects in the area.

Significant Impact Criteria

Significance criteria are used to establish what constitutes an impact. For this analysis, the criteria used to determine significant impacts on signalized intersections are based on City of San Jose Level of Service standards. The City of San Jose LOS Policy is the adopted established threshold for CEQA. Project impacts also were analyzed according to the County Congestion Management Program (CMP) methodology for the CMP study intersections.

City of San Jose Definition of Significant Intersection Impacts

The project is said to create a significant adverse impact on traffic conditions at a signalized intersection in the City of San Jose if for either peak hour:

1. The level of service at the intersection degrades from an acceptable LOS D or better under background conditions to an unacceptable LOS E or F under background plus project conditions, or
2. The level of service at the intersection is an unacceptable LOS E or F under background conditions and the addition of project trips causes both the critical-movement delay at the intersection to increase by four (4) or more seconds *and* the volume-to-capacity ratio (V/C) to increase by one percent (.01) or more.

An exception to this rule applies when the addition of project traffic reduces the amount of average stopped delay for critical movements (i.e., the change in average stopped delay for critical movements is negative). In this case, the threshold of significance is an increase in the critical V/C value by .01 or more.

A significant impact by City of San Jose standards is said to be satisfactorily mitigated when measures are implemented that would restore intersection level of service to background conditions or better.

CMP Definition of Significant Intersection Impacts

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

Transportation Network Under Background Plus Project Conditions

It is assumed in this analysis that the transportation network under background plus project conditions would be the same as the existing transportation network.

Project Trip Estimates

As described in Chapter 3, after applying the City of San Jose trip rates, appropriate trip reductions, and existing site trip credits, the project would generate 2,072 new daily vehicle trips, with 171 new trips occurring during the AM peak hour and 198 new trips occurring during the PM peak hour. Using the inbound/outbound splits recommended by the City of San Jose, the project would produce 63 net inbound and 108 net outbound trips during the AM peak hour, and 126 net inbound and 72 net outbound trips during the PM peak hour.

Background Plus Project Traffic Volumes

The peak hour trips generated by the project were added to background traffic volumes to obtain background plus project traffic volumes (see Figure 9). The project trips were assigned to the roadway system in accordance with the trip distribution patterns discussed in Chapter 3.

Traffic volumes for all components of traffic are tabulated in Appendix C.

Intersection LOS Under Background Plus Project Conditions

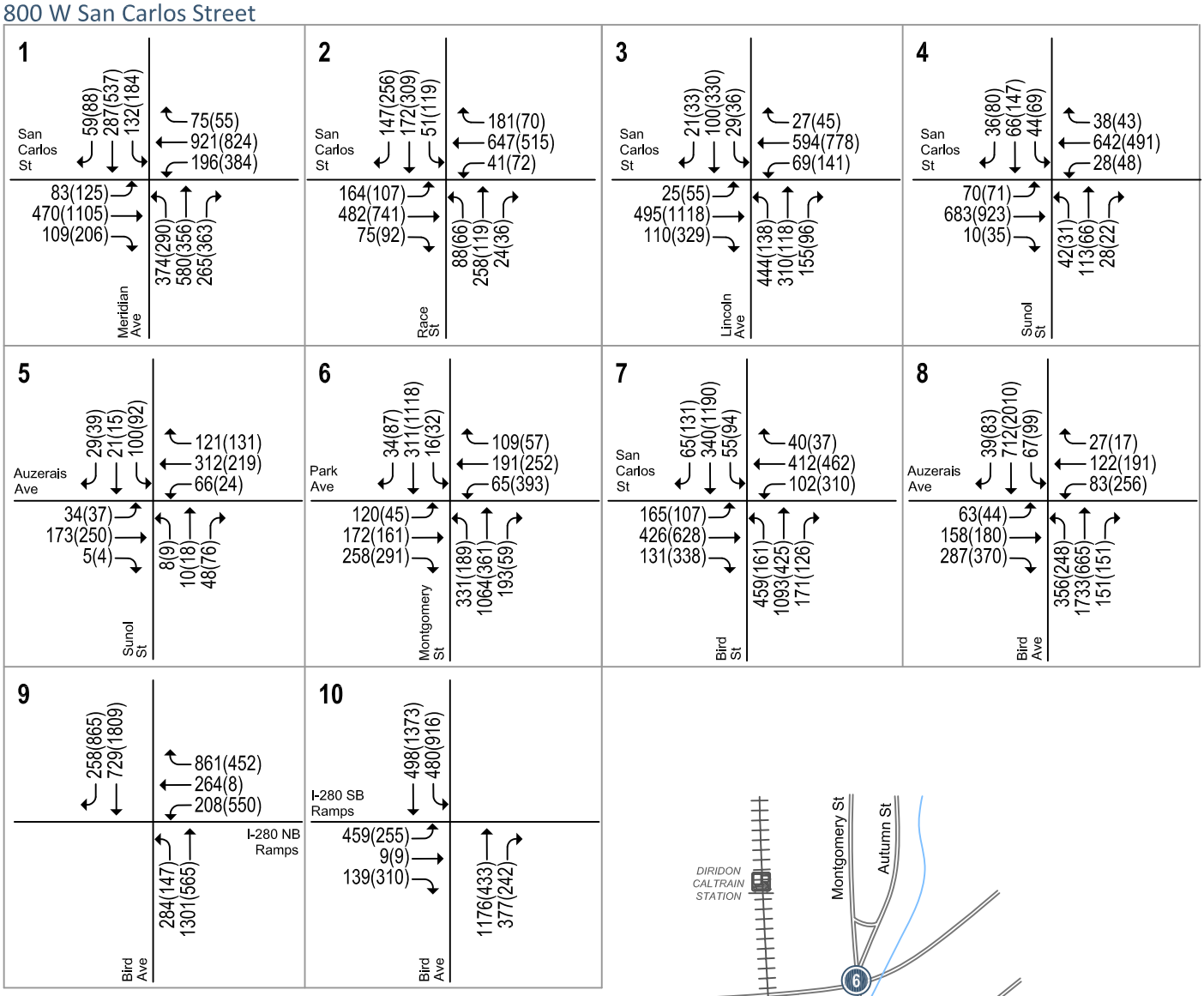
The results of the intersection level of service analysis under background plus project conditions show that, measured against the City of San Jose and CMP level of service standards, all of the study intersections would operate at an acceptable level of service during both the AM and PM peak hours of traffic (see Table 9). Therefore, none of the intersections would be significantly impacted by the project.

The intersection level of service calculation sheets are included in Appendix D.

Freeway Segment Level of Service Analysis

The results of the CMP freeway level of service analysis are summarized in Table 10. Traffic volumes on the study freeway segments were estimated by adding project trips to the existing volumes obtained from the 2012 CMP Annual Monitoring Report. The results show that the project would not cause significant increases in traffic volumes (one percent or more of freeway capacity) on any of the study freeway segments currently operating at LOS F.

The results of the CMP freeway level of service analysis are summarized in Table 10.



LEGEND

= Project Site Location

X = Study Intersection

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 9
Background Plus Project Traffic Volumes

Table 9
Background Plus Project Intersection Levels of Service

Study Number	Intersection	Peak Hour	Background Avg. Delay (sec.)	Background LOS	Background + Project Avg. Delay (sec.)	Background + Project LOS	Incr. In Crit. Delay (sec.)	Incr. In Crit. V/C
1	Meridian Av & San Carlos St	AM	41.5	D	41.6	D	0.1	0.004
		PM	54.3	D	54.9	D	1.2	0.015
2	Race St & San Carlos St	AM	37.8	D	37.8	D	-0.1	0.004
		PM	51.2	D	51.7	D	0.8	0.009
3	Lincoln Av & San Carlos St	AM	36.5	D	36.5	D	0.1	0.004
		PM	43.9	D	43.9	D	0.1	0.008
4	Sunol St & San Carlos St	AM	15.9	B	16.4	B	0.6	0.016
		PM	17.4	B	17.8	B	0.6	0.024
5	Sunol St & Auzerais Av	AM	6.7	A	8.2	A	2.3	0.038
		PM	7.6	A	8.1	A	0.8	0.030
6	Montgomery St & Park Av (SJ)	AM	27.9	C	28.0	C	0.1	0.003
		PM	37.5	D	37.5	D	0.0	0.001
7	Bird Av & San Carlos St (SJ) *	AM	34.3	C	34.3	C	0.0	0.001
		PM	40.2	D	40.3	D	0.2	0.004
8	Bird Av & Auzerais Av (SJ)	AM	22.6	C	23.2	C	0.5	0.007
		PM	31.2	C	32.9	C	2.8	0.034
9	Bird Av & I-280 Ramps (North) *	AM	34.1	C	34.4	C	0.6	0.008
		PM	32.0	C	32.6	C	0.4	0.003
10	Bird Av & I-280 Ramps (South) *	AM	32.2	C	32.5	C	0.3	0.009
		PM	31.8	C	32.1	C	0.5	0.004

Notes:
* Denotes a VTA Congestion Management Program (CMP) intersection.
(SJ) Denotes a City of San Jose exempt downtown core intersection.

Table 10
Freeway Segment Level of Service Analysis

						Existing Plus Project Trips												Project Trips					
						Mixed-Flow						HOV Lane							Mixed-Flow		HOV Lane		
Freeway	Segment			Direction	Peak Hour	Avg. Speed/a/	# of Lanes	Capacity (vph)	Volume/a/	Density	LOS	Avg. Speed/a/	# of Lanes	Capacity (vph)	Volume/a/	Density	LOS	Total Volume	Volume	% Capacity	Volume	% Capacity	Impact?
SR 87	Alma Av	to	I-280	NB	AM	21	2	4,400	3,414	81.3	F	65	1	1,650	2,021	31.1	D	5	4	0.1%	1	0.1%	*NO*
					PM	66	2	4,400	3,307	25.1	C	70	1	1,650	1,192	17.0	B	9	7	0.2%	2	0.1%	*NO*
SR 87	I-280	to	Julian St	NB	AM	41	2	4,400	4,207	51.3	E	66	1	1,650	1,465	22.2	C	22	17	0.4%	5	0.3%	*NO*
					PM	67	2	4,400	2,009	15.1	B	70	1	1,650	563	8.0	A	12	9	0.2%	3	0.2%	*NO*
SR 87	Julian St	to	I-280	SB	AM	67	2	4,400	2,409	18.1	C	67	1	1,650	413	6.2	A	12	9	0.2%	3	0.2%	*NO*
					PM	20	2	4,400	3,337	83.4	F	70	1	1,650	1,615	23.1	C	22	17	0.4%	5	0.3%	*NO*
SR 87	I-280	to	Alma Av	SB	AM	67	2	4,400	2,407	18.1	C	67	1	1,650	412	6.2	A	9	7	0.2%	2	0.1%	*NO*
					PM	18	2	4,400	3,144	87.3	F	70	1	1,650	1,681	24.0	C	5	4	0.1%	1	0.1%	*NO*
I-280	Winchester Bl	to	I-880	EB	AM	66	3	6,900	5,161	26.1	D	67	1	1,650	944	14.1	B	15	11	0.2%	4	0.2%	*NO*
					PM	52	3	6,900	6,581	42.2	D	70	1	1,650	1,477	21.1	C	28	21	0.3%	7	0.4%	*NO*
I-280	I-880	to	Meridian Av	EB	AM	66	4	9,200	5,321	20.2	C	67	1	1,650	674	10.1	A	15	11	0.1%	4	0.2%	*NO*
					PM	25	3	6,900	5,501	73.3	F	70	1	1,650	2,107	30.1	D	28	21	0.3%	7	0.4%	*NO*
I-280	Meridian Av	to	Bird Av	EB	AM	46	4	9,200	8,657	47.0	E	--	--	--	--	--	--	7	7	0.1%	0	--	*NO*
					PM	28	4	9,200	7,524	67.2	F	--	--	--	--	--	--	14	14	0.2%	0	--	*NO*
I-280	Bird Av	to	SR 87	EB	AM	66	4	9,200	5,821	22.0	C	--	--	--	--	--	--	11	11	0.1%	0	--	*NO*
					PM	21	4	9,200	6,726	80.1	F	--	--	--	--	--	--	6	6	0.1%	0	--	*NO*
I-280	SR 87	to	10th St	EB	AM	66	4	9,200	5,821	22.0	C	--	--	--	--	--	--	11	11	0.1%	0	--	*NO*
					PM	32	4	9,200	7,946	62.1	F	--	--	--	--	--	--	6	6	0.1%	0	--	*NO*
I-280	10th St	to	SR 87	WB	AM	18	4	9,200	6,276	87.2	F	--	--	--	--	--	--	6	6	0.1%	0	--	*NO*
					PM	57	4	9,200	8,912	39.1	D	--	--	--	--	--	--	12	12	0.1%	0	--	*NO*
I-280	SR 87	to	Bird Av	WB	AM	11	4	9,200	4,936	112.2	F	--	--	--	--	--	--	6	6	0.1%	0	--	*NO*
					PM	65	4	9,200	8,072	31.0	D	--	--	--	--	--	--	12	12	0.1%	0	--	*NO*
I-280	Bird Av	to	Meridian Av	WB	AM	13	4	9,200	5,424	104.3	F	--	--	--	--	--	--	14	14	0.2%	0	--	*NO*
					PM	58	4	9,200	8,827	38.0	D	--	--	--	--	--	--	7	7	0.1%	0	--	*NO*
I-280	Meridian Av	to	I-880	WB	AM	7	3	6,900	3,100	147.6	F	27	1	1,650	1,847	68.4	F	27	20	0.3%	7	0.4%	*NO*
					PM	66	3	6,900	5,181	26.2	D	70	1	1,650	1,263	18.0	C	14	11	0.2%	3	0.2%	*NO*
I-280	I-880	to	Winchester Bl	WB	AM	16	3	6,900	4,540	94.6	F	42	1	1,650	2,107	50.2	E	27	20	0.3%	7	0.4%	*NO*
					PM	66	3	6,900	5,321	26.9	D	70	1	1,650	1,473	21.0	C	14	11	0.2%	3	0.2%	*NO*

/a/ Source: Santa Clara Valley Transportation Authority Congestion Management Program Monitoring Study, 2012.

6. Other Transportation Issues

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

- Intersection operations analysis – vehicle queuing and storage at selected intersections
- Potential project impacts to transit, bicycle, and pedestrian facilities
- Site access and on-site circulation

Unlike the level of service impact methodology, which is adopted by the City Council, the analyses in this chapter are based on professional judgment in accordance with the standards and methods employed by the traffic engineering community.

Intersection Operations Analysis

The analysis of intersection level of service was supplemented with an analysis of left-turn pocket storage and vehicle queuing for intersections where the project would add a notable number of left turns. For the purpose of this analysis, 5 or more peak hour vehicle trips were considered a noteworthy number of left turns. Accordingly, not all of the study intersections were evaluated for left-turn vehicle queues. The operations analysis is based on vehicle queuing for high demand turning movements at intersections. Vehicle queues were estimated using a Poisson probability distribution, which estimates the probability of "n" vehicles for a vehicle movement using the following formula:

$$P(x=n) = \frac{\lambda^n e^{-(\lambda)}}{n!}$$

Where:

P (x=n) = probability of "n" vehicles in queue per lane
n = number of vehicles in the queue per lane
λ = Average # of vehicles in the queue per lane (vehicles per hr per lane/signal cycles per hr)

The basis of the analysis is as follows: (1) the Poisson probability distribution is used to estimate the 95th percentile maximum number of queued vehicles per signal cycle for a particular movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the maximum queue length is compared to the existing or planned available storage capacity for the movement. This analysis thus provides a basis for estimating future left-turn storage requirements at signalized intersections. The 95th percentile queue length value indicates that during the peak hour, a queue of this length or less would occur on 95 percent of the signal cycles. Or, a queue length larger than the 95th percentile queue would only occur on 5 percent of the signal cycles (about 3 cycles during the peak hour for a signal with a 60-second cycle length). Therefore, left-turn storage pocket designs based on the 95th percentile queue length would ensure that storage space would be exceeded only 5 percent of the time. The 95th percentile queue length is also known as the "design queue length." The vehicle queue estimates and a tabulated summary of the findings are provided in Table 11.

Table 11
Vehicle Queuing and Left-Turn Pocket Storage Analysis

	San Carlos Av & Sunol St				Bird Av & I-280 (South)				Bird Av & Auzerais Av	
Movement:	NBL-T-R [3]		WBL		EBL		SBL		NBL	
Peak Hour Period:	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing										
Cycle/Delay[1] (sec)	75	75	75	75	120	120	120	120	120	120
Volume (vphpl)	71	42	10	13	328	170	384	587	311	181
Avg. Queue (veh/ln.)	1.5	0.9	0.2	0.3	10.9	5.7	12.8	19.6	10.4	6.0
Avg. Queue[2] (ft./ln)	37	22	5	7	273	142	320	1859	259	151
95th %. Queue (veh/ln.)	4	3	1	1	17	10	19	27	16	10
95th %. Queue (ft./ln)	100	75	25	25	425	250	475	675	400	250
Storage (ft./ ln.)	700	700	125	125	700	700	425	425	125	125
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	**N**	**N**	**N**	**N**
Existing Plus Project										
Cycle/Delay[1] (sec)	75	75	75	75	120	120	120	120	120	120
Volume (vphpl)	88	59	14	22	335	184	395	593	328	213
Avg. Queue (veh/ln.)	1.8	1.2	0.3	0.5	11.2	6.1	13.2	19.8	10.9	7.1
Avg. Queue[2] (ft./ln)	46	31	7	11	279	153	329	494	273	178
95th %. Queue (veh/ln.)	4	3	1	2	17	10	19	27	17	12
95th %. Queue (ft./ln)	100	75	25	50	425	250	475	675	425	300
Storage (ft./ ln.)	700	700	125	125	700	700	425	425	125	125
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	**N**	**N**	**N**	**N**
Background										
Cycle/Delay[1] (sec)	75	75	75	75	120	120	120	120	120	120
Volume (vphpl)	166	102	24	39	452	241	469	910	339	216
Avg. Queue (veh/ln.)	3.5	2.1	0.5	0.8	15.1	8.0	15.6	30.3	11.3	7.2
Avg. Queue[2] (ft./ln)	86	53	13	20	377	201	391	758	283	180
95th %. Queue (veh/ln.)	7	5	2	2	22	13	22	40	17	12
95th %. Queue (ft./ln)	175	125	50	50	550	325	550	1000	425	300
Storage (ft./ ln.)	700	700	125	125	700	700	425	425	125	125
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	**N**	**N**	**N**	**N**
Background Plus Project										
Cycle/Delay[1] (sec)	75	75	75	75	120	120	120	120	120	120
Volume (vphpl)	183	119	28	48	459	255	480	916	356	248
Avg. Queue (veh/ln.)	3.8	2.5	0.6	1.0	15.3	8.5	16.0	30.5	11.9	8.3
Avg. Queue[2] (ft./ln)	95	62	15	25	383	213	400	763	297	207
95th %. Queue (veh/ln.)	7	5	2	3	22	14	23	40	18	13
95th %. Queue (ft./ln)	175	125	50	75	550	350	575	1000	450	325
Storage (ft./ ln.)	700	700	125	125	700	700	425	425	125	125
Adequate (Y/N)	Y	Y	Y	Y	Y	Y	**N**	**N**	**N**	**N**

Notes:

[1] Vehicle queue calculations based on cycle length for signalized intersections.

[2] Assumes 25 feet per vehicle queued.

[3] The NB LT, through and RT movements share a lane. Since Sunol St has only one travel lane in each direction, the vehicle queues reported are based on the total NB traffic volume (LT + through + RT volumes). Sunol St provides about 700 feet of vehicle storage between San Carlos St and the LRT tracks near Auzerais Av. The project driveway on Sunol Street is located about 250 feet from San Carlos St.

Bird Avenue and I-280 Ramps (South)

The queuing analysis indicates that the maximum vehicle queues for the southbound left-turn pocket on Bird Avenue at the I-280 southbound on-ramp currently exceed the existing vehicle storage capacity

during both the AM and PM peak hours of traffic, and that this condition would continue to occur under existing plus project, background, and background plus project conditions. The southbound left-turn vehicle queues at the Bird Avenue/I-280 ramps (south) intersection are long due to the high-demand movement and the metering light on the I-280 southbound on-ramp. It often takes two signal cycles for all of the vehicles to clear the intersection. The southbound left-turn pocket provides 425 feet of vehicle storage for a capacity of up to 17 vehicles. The 95th percentile vehicle queue currently is 475 feet during the AM peak hour and 675 feet during the PM peak hour. A maximum queue of 1,000 feet would occur during the PM peak hour under background conditions as a result of approved projects in the area. The project would not increase the maximum vehicle queue. It is not possible to provide additional southbound left-turn pocket storage.

Bird Avenue and Auzerais Avenue

The queuing analysis indicates that the maximum vehicle queues for the northbound left-turn pocket at the Bird Avenue/Auzerais Avenue intersection currently exceed the existing vehicle storage capacity during both the AM and PM peak hours of traffic, and that this condition would continue to occur under existing plus project, background, and background plus project conditions. Due to this intersection's close proximity to the I-280 northbound off-ramp, the northbound left-turn pocket provides only about 125 feet of vehicle storage for a capacity of up to 5 vehicles. The 95th percentile vehicle queue currently is 250 feet during the PM peak hour and 400 feet during the AM peak hour. A maximum queue of 425 feet would occur during the AM peak hour under background conditions as a result of approved projects in the area. The project would increase the maximum vehicle queue by 25 feet, or one vehicle length, when compared to background conditions. It is not possible to provide additional left-turn pocket storage.

Pedestrian and Bicycle Facilities

Pedestrian facilities consist mostly of sidewalks along the streets in the immediate vicinity of the project site. Crosswalks with pedestrian signal heads and push buttons are located at all of the signalized intersections in the study area. There are some segments of roadway (e.g., Auzerais Avenue between Race Street and Sunol Street) where sidewalks are not continuous or are very narrow. Those roadway segments provide access to commercial and light industrial uses. Overall, the existing network of sidewalks exhibits good connectivity and would provide new residents with safe routes to transit services and other points of interest in the area.

While most streets in the study area are acceptable for bicycle use, only two short segments of roadway in the vicinity of the project site include Class II county-designated bike lanes: Race Street between Auzerais Avenue and Parkmoor Avenue, and Park Avenue between Sunol Street and Montgomery Street. Although many roadways in the project area are lacking bike lanes, some residents may nonetheless choose to use them for commuting purposes since they may provide the shortest possible route. Note also that the San Jose Diridon station is located about 2,000 feet from the project site, and bicycles are allowed on the LRT trains and Caltrain. A reasonable assumption for bicycle commute trip generation is a 3 percent mode share. This calculates to approximately 6 bicycle trips during both the AM and PM peak hours. Thus, the project would be expected to add only a small amount of bicycle traffic to the roadways in the study area during the peak commute periods of the day.

A connection to the northern segment of the Los Gatos Creek Trail system is located just 500 feet east of the project site with access provided via Dupont Street. The off-street trail begins at San Carlos Street and extends south. From San Carlos Street, the Guadalupe River multi-use trail system can be accessed. The Guadalupe River trail system is an 11-mile trail that runs through the City of San Jose along the Guadalupe River and is shared with pedestrians and separated from motor vehicle traffic. The Guadalupe River trail is a continuous Class I bikeway from Curtner Avenue in the south to SR 237 in the north.

According to the San Jose Bike Plan 2020 Bikeway Network map, there are plans to connect the short northern segment of the Los Gatos Creek Trail to the rest of the trail system to the south via new bike lanes and bike routes. Class II bicycle facilities (striped bike lanes) also are planned along the following roadways in the future:

- Lincoln Avenue, between Malone Road and Park Avenue

- Race Street, between Fruitdale Avenue and San Carlos Street
- Auzerais Avenue, between Meridian Avenue and Woz Way
- Park Avenue, between Market Street and Race Street

Transit Services

According to the project site plan, a new LRT station is planned adjacent to the project site. The new station platform would be situated along a segment of the existing LRT line that runs between San Carlos Street and Sunol Street, and would include a new pedestrian crossing and walkway. The San Jose Diridon Station is served by LRT trains and provides Caltrain, ACE and Amtrak services. In addition, the existing bus stop located on W San Carlos Street adjacent to the site would remain. Thus, it is reasonable to assume that some residents would utilize the transit services in the area. Applying a 9 percent transit mode share, which is the maximum allowed transit reduction per VTA guidelines, equates to approximately 17 new transit riders during both the AM and PM peak hours. It is estimated that these new riders could be accommodated by the current available capacities of the LRT, commuter rail, and bus services in the study area.

Site Access and Circulation

The site access and circulation evaluation is based on the April 25, 2014 site plan prepared by Architects Orange (Figure 10). On-site vehicular circulation was reviewed in accordance with generally accepted traffic engineering standards.

Vehicular Site Access

Access to the project site would be provided via two driveways: one right-turn only driveway on W San Carlos Street and one full access driveway on Sunol Street. Both driveways measure 26 feet wide (measured at the throat) and would provide access to all 6 levels of the parking garage. The at-grade parking level, as well as a portion of garage level 2, would serve the retail component of the project. A traffic circle is located on level 2 near the residential security gate (secured residential parking entrance), which would allow retail customers to easily turn around if they were unable to find parking.

The San Carlos Street driveway would provide stacking space for approximately 5 inbound vehicles, and the Sunol Street driveway would provide stacking space for about 4 inbound vehicles. The City typically requires a minimum distance of 50 feet, measured from the face of curb, in order to provide adequate stacking space for at least two inbound vehicles. Thus, adequate stacking space for inbound vehicles would be provided at both driveways.

The project-generated trips that are estimated to occur at the San Carlos Street driveway are 17 inbound trips and 33 outbound trips during the AM peak hour, and 32 inbound trips and 24 outbound trips during the PM peak hour. The project-generated trips that are estimated to occur at the Sunol Street driveway are 57 inbound trips and 82 outbound trips during the AM peak hour, and 107 inbound trips and 61 outbound trips during the PM peak hour. Vehicle queuing issues are not expected to occur at either driveway, based on the relatively low number of project trips at the right-turn only W San Carlos Street driveway, and the low traffic volumes on Sunol Street.

Sight Distance

Based on the site plan provided, the driveways serving the project would be free and clear of obstructions, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and vehicles traveling on W San Carlos Street and Sunol Street. The site plan shows a 5-foot building setback along San Carlos Street, and a 10-foot setback along Sunol Street. The project proposes street trees along the project frontages, which would not conflict with a driver's ability to locate a gap in traffic. Adequate sight distance (sight distance triangles) should be provided at both driveways in accordance with Caltrans standards. Sight distance triangles should be measured approximately 10 feet back from the traveled way. Appropriate visible warning signs should be provided at the parking garage entrances to alert pedestrians and bicyclists of vehicles exiting the garages.

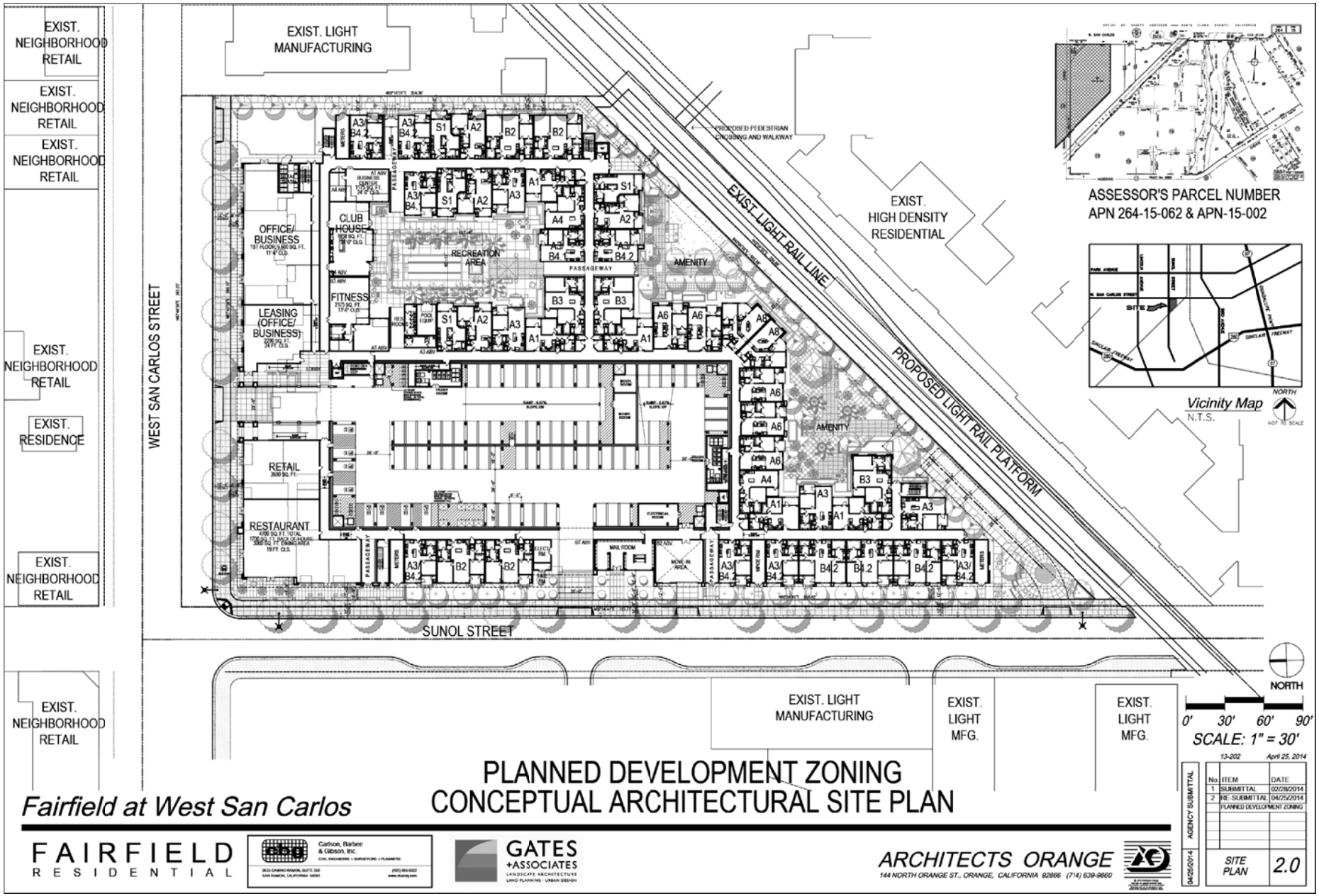


Figure 10
Site Plan

Providing the appropriate sight distance reduces the likelihood of a collision at a driveway or intersection, and provides drivers with the ability to exit a driveway or locate sufficient gaps in traffic. Sight distance generally should be provided in accordance with Caltrans standards. The minimum acceptable sight distance is often considered the Caltrans stopping sight distance. Sight distance requirements vary depending on the roadway speeds. For driveways on W San Carlos Street, which has a posted speed limit of 35 mph, the Caltrans stopping sight distance is 300 feet (based on a design speed of 40 mph). For driveways on Sunol Street, which has a posted speed limit of 25 mph, the Caltrans stopping sight distance is 200 feet (based on a design speed of 30 mph). Thus, a driver must be able to see 300 feet down W San Carlos Street and 200 feet down Sunol Street in order to stop and avoid a collision.

Based on the project site plan, it can be concluded that both project driveways would meet the Caltrans sight distance standards.

On-Site Circulation

On-site vehicular circulation was reviewed for the project in accordance with generally accepted traffic engineering standards. The site plan shows efficient circulation within the parking garage with only one dead-end drive aisle at the top of level 6. As previously described, a traffic circle is located on level 2 near the residential security gate to allow retail customers to turn around if they are unable to find parking.

The City's standard width for two-way drive aisles is 26 feet wide where 90-degree parking is provided. This allows sufficient room for vehicles to back out of parking spaces. According to the site plan, the drive aisles on all levels of the parking garage measure 26 feet wide. Adequate access to all parking stalls would be provided.

Parking Stall Dimensions

According to the site plan, all of the 90-degree parking stalls are shown to be 9 feet wide by 18 feet deep. This meets the City of San Jose off-street parking design standard for full-size car spaces. Van accessibility is provided at all handicapped stall locations.

Overall vehicular circulation on all levels of the parking garage would be adequate to serve the project.

Truck Access

According to the site plan, garbage trucks, moving vans and large delivery vehicles will perform their operations outside of the building at designated loading areas where adequate vertical clearance would be provided. A loading area would be located at the northeast corner of the site where Dupont Street currently branches off of W San Carlos Street. A second loading area, located on the west side of the property approximately 65 feet south of the Sunol Street driveway, is labeled move-in and trash staging area. Moving and garbage collection activities would occur at this staging area on Sunol Street.

The loading entry on W San Carlos Street is shown to be 25 feet wide, and the loading entry on Sunol Street is shown to be 16 feet wide. Access was reviewed for the truck types WB-40 and SU-30, which represent small semi-trailer trucks, various emergency vehicles, garbage trucks, and small to medium delivery and moving vehicles. Based on the driveway locations and dimensions, the loading areas would be adequate to accommodate these truck types. Traffic operations on Dupont Street and Sunol Street may be interrupted temporarily while trucks negotiate these driveways. Traffic on W San Carlos Street most likely would not be affected.

Pedestrian and Bicycle Access and Circulation

The project is proposing to reconstruct the sidewalk along its frontages on W San Carlos Street and Sunol Street, as well as construct new sidewalk along the southern and eastern boundaries of the site. The new sidewalk on the southern portion of the site would provide a direct connection to the planned adjacent LRT station platform. Sheltered passageways would provide sidewalk access for new residents. The improvements to the existing narrow sidewalks on W San Carlos Street and Sunol Street would enhance pedestrian safety and walkability in the immediate vicinity of the project site by bringing the sidewalks up to City standards.

The project proposes 90 bicycle parking spaces on the ground floor level: 80 for residents and 10 for the commercial component of the project. The bicycle parking spaces are located internally. According to the San Jose Bike Plan 2020 Bikeway Network map, no bicycle facilities are planned on W San Carlos Street or Sunol Street.

7. Cumulative Conditions

This chapter presents a summary of the traffic conditions that would occur under cumulative conditions. Cumulative development typically includes projects that are in the pipeline (pending projects) but are not yet approved. This traffic scenario is evaluated in order to fulfill California Environmental Quality Act (CEQA) requirements.

Since the completion of the original Downtown Strategy 2000 EIR, the planned extension of Bay Area Rapid Transit (BART) to San Jose and the High Speed Rail (HSR) project have advanced in their respective planning stages. Therefore, it was deemed necessary that both the BART extension and HSR projects be included as part of this cumulative analysis.

Cumulative Traffic Volumes

Cumulative traffic volumes were obtained from the Diridon Station Area Plan (DSAP) EIR for consistency purposes. Cumulative conditions consist of traffic volumes associated with the approved Downtown Strategy 2000 and DSAP projects, plus the addition of traffic associated with the BART extension and HSR projects.

The 800 W San Carlos Street project site is located within the DSAP study area and is part of the DSAP Project Block referred to as Dupont/McEvoy. Thus, some amount of future development was assumed for the site in the DSAP study. In the DSAP study, the project site is made up of Blocks D9, D10 and D11. Block D9 includes 12,000 square feet (s.f.) of retail space and 105 residential units. Block D10 consists of 13,000 s.f. of retail space and 75 residential units. Block D11 includes 100 residential units. This amounts to a total of 25,000 s.f. of retail space and 280 residential units.

For consistency purposes, the amount of development proposed as part of the 800 W San Carlos Street project was compared to the amount of development assumed in the DSAP study for the same site (see Table 12 below). Based on the comparison, the proposed project would generate 117 more daily vehicle trips than the development assumed in the DSAP study for the same site, with 18 more trips occurring during the AM peak hour and 13 more trips occurring during the PM peak hour. Since the trip generation estimates for the proposed project and the DSAP study are comparable, it can be concluded that the proposed project is consistent with the development assumed in the DSAP study.

Cumulative Conditions Intersection Levels of Service

The intersection levels of service under cumulative conditions were obtained from the DSAP EIR. The DSAP study analyzed 9 of the 10 intersections that also were analyzed for the 800 W San Carlos Street project. The intersection of Sunol Street and Auzerais Avenue was not analyzed in the DSAP study. However, this intersection is a very low volume intersection that currently operates at LOS A during both

the AM and PM peak hours of traffic and would continue to do so under background plus project conditions. Therefore, analysis of this intersection under cumulative conditions was deemed unnecessary.

Table 12
Trip Generation Comparison – 800 W San Carlos Street Project vs. DSAP Study

Land Use	Size		Daily Rate	Daily Trips	AM Peak Hour Pk-Hr Rate	AM In	AM Out	AM Total	PM Peak Hour Pk-Hr Rate	PM In	PM Out	PM Total
800 W San Carlos St Project												
Apartments [1]	315	units	6.0	1,890	0.6	66	123	189	0.6	123	66	189
Commercial [2]	22,665	s.f.	40.0	907	1.2	19	8	27	3.6	41	41	82
Gross Project Trips:				*2,797*		*85*	*131*	*216*		*164*	*107*	*271*
DSAP (Blocks D9-11)												
Apartments [1]	280	units	6.0	1,680	0.6	59	109	168	0.6	109	59	168
Commercial [2]	25,000	s.f.	40.0	1,000	1.2	21	9	30	3.6	45	45	90
Gross DSAP Trips:				*2,680*		*80*	*118*	*198*		*154*	*104*	*258*
Difference (Project - DSAP):				**117**		**5**	**13**	**18**		**10**	**3**	**13**

Notes:
[1] Based on "Apartments" rates contained in the *San Jose TIA Handbook* , November 2009.
[2] Based on "Specialty Retail/Strip Commercial" rates contained in the *San Jose TIA Handbook* , November 2009.

The results of the cumulative intersection level of service analysis show that 4 of the study intersections are projected to operate at LOS E or F during at least one of the peak hours (see Table 13). The remaining study intersections are projected to operate at an acceptable LOS D or better during both the AM and PM peak hours under cumulative conditions.

Table 13
Cumulative Intersection Levels of Service

Study Number	Intersection	Peak Hour	Avg. Delay (sec.)	LOS
1	Meridian Av & San Carlos St	AM	46.1	D
		PM	**63.0**	**E**
3	Lincoln Av & San Carlos St	AM	38.0	D
		PM	**55.7**	**E**
6	Montgomery St & Park Av (SJ)	AM	**78.6**	**E**
		PM	**151.1**	**F**
7	Bird Av & San Carlos St (SJ) *	AM	53.9	D
		PM	**110.4**	**F**

Notes:
* Denotes a VTA Congestion Management Program (CMP) intersection.
(SJ) Denotes a City of San Jose exempt downtown core intersection.
BOLD indicates a deficient level of service.

Meridian Avenue and San Carlos Street

According to the Downtown Strategy 2000 EIR, there are no feasible improvements for the Meridian Avenue and San Carlos Street intersection due to right-of-way restrictions. The EIR indicates that the addition of Strategy 2000-generated traffic to this intersection (as well as to 16 other intersections identified in the report) would result in a significant unavoidable impact.

Note that this intersection has been identified as a City of San Jose Protected Intersection. Protected Intersections consist of locations that have been built to their planned maximum capacity and where expansion of the intersection would have an adverse effect upon other transportation facilities (such as pedestrian, bicycle, transit systems, etc.). Protected Intersections are, therefore, not required to maintain a Level of Service D, which is the City of San Jose standard. The deficiencies at all 25 Protected Intersections in the City of San Jose have been disclosed and overriden in previous EIRs.

Lincoln Avenue and San Carlos Street

According to the DSAP EIR, there are no feasible improvements for the Lincoln Avenue and San Carlos Street intersection. The DSAP study recommended that the Lincoln Avenue and San Carlos Street intersection be added to the City's Protected Intersection list because it serves as a gateway to the greater downtown area.

Montgomery Street and Park Avenue

The intersection of Montgomery Street and Park Avenue is located in the downtown core and is therefore exempt from the City's Level of Service Policy. According to the DSAP EIR, this intersection is projected to operate below the City LOS standard due to the planned narrowing of Bird Avenue (which transitions into Montgomery Street) from six to four lanes and Park Avenue from four to two lanes that were assumed complete under cumulative conditions. The reduction in the number of travel lanes was proposed as part of the improvements identified in the Ballpark (baseball stadium) study.

Bird Avenue and San Carlos Street

Although this intersection is located in the downtown core and is therefore exempt from the City's Level of Service Policy, potential improvements were identified for consideration in the DSAP EIR for the intersection of Bird Avenue and San Carlos Street. The Strategy 2000 EIR projected this intersection to operate below the City's LOS standards. The Downtown Strategy 2000 EIR identified the addition of a second northbound left-turn lane as a potential improvement. The addition of a second northbound left-turn lane on Bird Avenue was also identified as a potential improvement as part of the proposed baseball stadium. The implementation of the second northbound left-turn lane is projected to only improve intersection level of service to LOS E. In accordance with CMP conformance standard, this is an acceptable level of service. The deficient levels at the intersection were identified in the Strategy 2000 EIR. Operational problems such as blocked intersections and an imbalance of lane usage along Bird Avenue between San Carlos Street and I-280 are due to large volumes and the close spacing of intersections. As such, signal-timing modifications along Bird Avenue between I-280 and San Carlos Street should be implemented.

8. Conclusions

The potential impacts of the project were evaluated in accordance with the standards set forth by the City of San Jose and the Congestion Management Program (CMP) of Santa Clara County. The study included the analysis of AM and PM peak hour traffic conditions for ten signalized intersections and seven freeway segments. Project impacts on other transportation facilities, such as bicycle facilities and transit services, were determined on the basis of engineering judgment.

Intersection Level of Service Analysis

The results of the intersection level of service analysis shows that, measured against the City of San Jose and CMP level of service impact criteria, none of the study intersections would be significantly impacted by the project.

Freeway Segments

The results of the freeway segment analysis show that the project would not cause significant increases in traffic volumes (one percent or more of freeway capacity) on any of the study freeway segments currently operating at LOS F, and none of the freeway segments currently operating at LOS E or better would worsen to LOS F as a result of the project. Therefore, based on CMP freeway impact criteria, none of the study freeway segments would be significantly impacted by the project.

Other Transportation Issues

The project would not have an adverse effect on existing transit, bicycle or pedestrian facilities in the study area. Site access and on-site circulation would be adequate.