C. TRANSPORTATION, CIRCULATION AND PARKING

The following discussion of transportation is based upon an analysis prepared for the project by Hexagon Transportation Consultants, Inc. A copy of that analysis and technical documentation is provided in Appendix C of the Technical Appendices of this EIR. The purpose of the analysis is to identify the potential impacts of the proposed major league stadium, parking garage and associated commercial space. The proposed project would also entail several changes to the existing roadway network in the vicinity of the project site. These improvements are necessary to accommodate the ballpark design and associated traffic. Montgomery Street, between W. San Fernando Street and Park Avenue, would be abandoned; Otterson Street, west of Montgomery Street also would be abandoned; the segment of Autumn Street between W. Santa Clara Street and Park Avenue would be converted from a one-way (northbound) street to a two-way street; likewise, the remaining segment of Montgomery Street between W. Santa Clara Street and W. San Fernando Street would be converted from a one-way (southbound) street to a two-way street. Project-sponsored improvements also include modifications to the Bird Avenue corridor from Park Avenue to I-280.

1. Setting

The project site is is shown on Figure V.C-1.

a. Scope of Study. This study was conducted for the purpose of identifying the potential transportation and circulation impacts related to the proposed development. Project impacts within the City of San Jose are evaluated following the standards and methodologies set forth by the City of San Jose and the Congestion Management Program (CMP) of the Santa Clara Valley Transportation Authority (VTA). The VTA administers the County Congestion Management Program (CMP). All of the study intersections are located within the Greater Downtown Core (defined by the area formed by Coleman Avenue/Julian Street/St. James Street to the north, 4th Street and Civic Plaza to the east, I-280 to the south, and White Street/Stockton Avenue/Southern Pacific Railroad tracks to the west) which is exempt from the City of San Jose level of service policy. The policy states …the Downtown Core Area is exempted from traffic mitigation requirements. Intersections within and on the boundary of this area are also exempted from the level of service (LOS) "D" Performance Criteria. Nevertheless, for this analysis, all the study intersections were evaluated following standard LOS Policy procedures in order to disclose the level of service of the surrounding signalized intersections under the project traffic conditions.

The traffic analysis is based on peak-hour levels of service for 18 signalized intersections and 14 directional freeway segments. The study intersections include signalized intersections in and around the Diridon/Arena area that may be significantly impacted by the proposed project due to either substandard operations under background conditions or the magnitude of project-generated trips expected at the intersection. Other intersections outside the study area – specifically to the west – were not included because based on the proposed distribution, significant increases in traffic volumes are not anticipated on these surrounding local streets. However, additional operational studies may be required after the project is operational to determine any 'spillover effects' to the surrounding neighborhoods (and potential remedies such as permit parking requirements, police traffic control, and temporary barricades). There would be no parking facilities located west of the stadium and the trip distribution pattern, derived from San Jose Sharks hockey games attendance pattern and data, shows that the vast majority of trips would enter the study area from the surrounding freeways. The freeway segments analyzed include those segments on which the project is expected to have the greatest effect.

Figure V.C-1: Site Location and Study Intersections

8½ x 11 B+W

The study intersections and freeway segments are identified below. Study intersections are also shown in Figure V.C-1. CMP intersections are denoted with an asterisk (*).

Study Intersections

NB SR 87 Ramps and W. Julian St.*
SB SR 87 Ramps and W. Julian St.*
NB SR 87 Ramp and Santa Clara St.*
NB I-280 Ramps and Bird Ave.*
SB I-280 Ramps and Bird Ave.*
Autumn St. and Santa Clara St.*
Autumn St. and W. San Fernando St.
Autumn St. and Park Ave.
Bird Ave and W. San Carlos St.*
Bird Ave. and Auzerais Ave.
Delmas Ave. and W. San Fernando St.
Delmas Ave. and Park Ave.
Delmas Ave. and W. San Carlos St.
Delmas Ave. and Auzerais Ave.
Woz Way and Park Ave.
Woz Way and W. San Carlos St.
Woz Way and Auzerais Ave.
SR 87 and Woz Way

Study Freeway Segments

SR 87 northbound between Alma Avenue and I-280
SR 87 southbound between Alma Avenue and I-280
SR 87 northbound between I-280 and Julian Street
SR 87 southbound between I-280 and Julian Street
SR 87 northbound between Julian Street and Coleman Avenue
SR 87 southbound between Julian Street and Coleman Avenue
I-280 eastbound between Meridian Avenue and Bird Avenue
I-280 westbound between Meridian Avenue and Bird Avenue
I-280 eastbound between Bird Avenue and SR 87
I-280 westbound between Bird Avenue and SR 87
I-280 eastbound between SR 87 and 10th Street
I-280 westbound between SR 87 and 10th Street
I-280 eastbound between 10th Street and McLaughlin Avenue
I-280 westbound between 10th Street and McLaughlin Avenue

(1) Event Scenarios. The major league baseball season and the regular national hockey league season have two weeks overlap in April and one to two weeks overlap in September/October. If the Sharks were to advance to the league playoffs, as they did in the 2003-2004 season, then the games could continue through May. Based on the event history at the HP Pavilion, there are about ten other large events per year (excluding Sharks games) during the baseball season. A large event is defined as one with attendance of greater than 10,000 (capacity is about 17,500). During the baseball season, there are about 55 night games per year, or an average of two per week. In a year with hockey

playoffs, such as 2004, there might be 13 days with overlapping large events. In a non-playoff year, such as 2005, there might be five days with overlap.

The traffic analysis for the single-event scenario is based on the occurrence of a weekday evening baseball game without a simultaneous event at the HP Pavilion.

There is a possibility of the simultaneous occurrence of a baseball game or other large event at the ballpark, such as a concert, and an event at the HP Pavilion, be it a national hockey league game or a large concert or other event. The traffic analysis for the simultaneous-events scenario is based upon the occurrence of a weekday evening baseball game with a simultaneous event at the HP Pavilion.

(2) Study Time Periods. The traffic impact analysis which follows addresses conditions preceding a weekday sell-out baseball game starting at 7:00 p.m. In the single-event scenario, traffic conditions at the study intersections were analyzed for both the hour between 5:00 and 6:00 p.m. and the hour between 6:00 and 7:00 p.m. The two time periods evaluated reflect the peak hour of background commute traffic (typically ending at or before 6:00 p.m.) and the peak hour of project-generated traffic (the hour immediately preceding an event). It was determined that at the study intersections, the overall intersection volume with the project is expected to be greatest during the hour immediately preceding a week night game (between 6:00 and 7:00 p.m.). Because this is the case and because hockey games start at 7:30 p.m., the simultaneous-events scenario was studied for the 6:00 to 7:00 p.m. period only. The 6:00 to 7:00 p.m. time period is referred to as the Project Peak Hour. The 5:00 to 6:00 p.m. time period is referred to as the San Jose Transportation Policy (SJTP) Peak Hour. At the study freeway segments, the traffic generated by the stadium is relatively low in comparison to the background commute traffic volumes, causing the peak volume with the project to occur between 5:00 and 6:00 p.m. Therefore, the study freeway segments were evaluated for only the hour between 5:00 and 6:00 p.m.

The ingress period preceding a weekday evening game represents the time of highest combined traffic with the project. Traffic volumes after a weekday evening game ends or before a weekday afternoon game begins are expected to be lower than that during the time periods analyzed because background traffic volumes are substantially lower during those hours.

In addition to the analysis of study intersections and freeway segments, this section of the EIR also includes the following analyses: potential parking impacts; adequacy of pedestrian facilities; and potential impacts on nearby neighborhoods. A discussion of project-sponsored roadway improvements on Bird Avenue concludes this section.

b. Analysis Scenarios. Traffic conditions were evaluated for the following four scenarios:

Scenario 1: Existing Conditions. Existing conditions reflect the traffic volumes obtained from new manual turning-movement counts conducted in November 2005 on both a night with no event at the HP Pavilion (single-event scenario) and a night with a hockey game at the HP Pavilion (simultaneous-events scenario).

Senario 2: Background Conditions. Background traffic volumes were estimated by adding to existing volumes the projected volumes from approved but not yet completed

developments.[1] The background projects include the recently approved mixed-use development on the San Jose Water Company site, the KB Homes project on Auzerais, and Phase I of the *Strategy 2000 Plan* along with other smaller projects. Background conditions also reflect planned changes to the roadway network, including the extension of Autumn Street northward to Coleman Avenue.

Scenario 3: Project Conditions. Traffic volumes with the project (hereafter called *project traffic volumes*) were estimated by adding to background traffic volumes the additional traffic generated by the proposed stadium and the changes in traffic patterns resulting from the proposed roadway network changes. Project conditions were evaluated relative to background conditions in order to determine potential project impacts.

Scenario 4: Cumulative Conditions. Cumulative conditions include traffic added by all potential development in the area. For this study the traffic generated by buildout of Downtown San Jose in accordance with the *Strategy 2000 Plan* was added to represent cumulative conditions.

c. Methodology. This section presents the methods used to determine the traffic conditions for each scenario described above.

(1) Analysis Methodologies and Level of Service Standards. Traffic conditions at the study intersections were evaluated using level of service. 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. Signalized study intersections located in the City of San Jose are usually subject to both the City of San Jose and CMP level of service standards. Both methods are described below.

City of San Jose Signalized Intersections. The City of San Jose level of service methodology uses the TRAFFIX software program, which is based on the *Highway Capacity Manual* (HCM) 2000 method for signalized intersections. TRAFFIX evaluates signalized intersection operations on the basis of average delay for all vehicles at a specified 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 delay and level of service is shown in Table V.C-1. The City's Downtown Core Policy states …the Downtown Core Area is exempted from traffic mitigation requirements. Intersections within and on the boundary of this area are also exempted from the LOS "D" Performance Criteria. Nevertheless, for this study, the intersections are evaluated following standard level of service policy procedures in order to disclose the level of service of the surrounding signalized intersections under the project traffic conditions.

CMP Intersections. Since TRAFFIX is the designated level of service methodology for both the CMP and the City of San Jose, the CMP study intersections are not analyzed separately, but rather

[1] For the simultaneous-events scenario, an adjustment was made to account for potential sell-out attendance at the HP Pavilion (the hockey game on the night of the traffic counts was not a sell-out). Note that this adjustment has been applied specifically to the HP Pavilion event-generated traffic only.

Table V.C-1: Intersection Level of Service Definitions Based on Delay

Level of Service	Description	Average Control Delay Per Vehicle (seconds)
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 delay.	Less than 10.0
B	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop that with LOS A, causing higher levels of average 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 many still pass through the intersection without stopping.	20.1 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop, and individual cycle failures occur frequently.	35.1 to 55.0
E	This is considered to be the limit of acceptable by most delay. These high delay values generally indicate poor 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 to such delay levels.	Greater than 80.0

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

are among the City of San Jose signalized study intersections analyzed using TRAFFIX. The only difference between the San Jose and CMP analyses is that project impacts are determined on the basis of different level of service standards –the CMP level of service standard for signalized intersections is LOS E or better.

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 segment is correlated to level of service as shown in Table V.C-2. The CMP requires that mixed-flow lanes and auxiliary lanes be analyzed separately from HOV (carpool) lanes. The CMP specifies that a capacity of 2,300 vehicles per hour per lane (vphpl) be used for segments six lanes or wider in both directions and a capacity of 2,200 vphpl be used for segments four lanes wide in both directions. The CMP defines an acceptable level of service for freeway segments as LOS E or better.

Table V.C-2: Freeway Segment Level of Service Definitions Based on Delay

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 with the traffic stream.	Less than 11.0
B	Speeds at the free-flow speed are generally maintained. The ability of maneuver with 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 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 with 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 with 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, *Highway Capacity Manual* (2000), Washington, D.C.; and *Traffic Level of Service Analysis Guidelines* (June 2003), Santa Clara Valley Transportation Authority.

d. Existing Traffic and Circulation Setting. This section 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.

(1) Existing Roadway Network. Regional access to the project site is provided via I-280, I-880, and SR 87. These facilities are described below.

- **I-280.** I-280 is an eight-lane freeway running east-west through downtown San Jose. Access to the site is provided via a diamond interchange at Bird Avenue. Access to the downtown area is further provided by interchanges at Almaden Boulevard and at 7th Street.
- **I-880.** I-880 is an eight-lane freeway running north- west of downtown San Jose. South of San Jose it becomes SR 17. Currently, the Coleman Avenue interchange at I-880 is under construction to reconfigure and widen the interchange. The estimated completion date is September 2006. Access to the site is provided indirectly via interchanges at I-280, Bascom Avenue, The Alameda, Coleman Avenue, and First Street.
- **SR 87**. SR 87 is a four-lane freeway running north-south through downtown San Jose. Currently SR 87 is under construction to add HOV lanes in each direction. The estimated completion date is sometime in 2007. SR 87 provides access to the site via half interchanges at Woz Way (to/from the south) and Park Avenue (to/from the north). Access to the downtown area is further provided by a northbound off-ramp to Santa Clara Street and a full interchange at Julian Street.
- **Bird Avenue**. Bird Avenue is a six-lane arterial street that runs north-south adjacent to the stadium site. South of I-280, Bird Avenue transitions to a local street within a few blocks. To the north, Bird Avenue becomes Montgomery Street and Autumn Street.
- **Montgomery Street**. Montgomery Street immediately adjacent to the project site is a two-lane, one-way arterial street (southbound) that provides a connection from Santa Clara Street to Bird Avenue. (Portions of Montgomery Street in the project area are three lanes.)

- **Autumn Street**. Autumn Street completes a one-way couplet with Montgomery Street. It is a three-lane, one-way arterial street running northbound from Bird Avenue to Santa Clara Street. North of Santa Clara Street, Autumn Street is a two-way street (one lane in each direction). Autumn Street currently ends just past Julian Street, but is planned to extend to Coleman Avenue in the San Jose General Plan.
- **Cahill Street**. Cahill Street is a short local street that connects the Diridon train station to The Alameda.
- **Delmas Avenue**. Delmas Avenue is a collector street that runs between Santa Clara Street and Auzerais Avenue. The part south of San Fernando Street is one-way southbound. Delmas Street provides access to the southbound SR 87 on-ramp at Auzerais Avenue.
- **Almaden Boulevard**. Almaden Boulevard generally is a six-lane arterial street in the downtown area. It provides access to the downtown via a partial interchange with I-280 (access to and from the west).
- **Julian Street**. Julian Street is an east-west arterial that traverses the north edge of downtown San Jose. It provides access to the area via an interchange with SR 87. East of SR 87, Julian is generally a two-lane one-way street (westbound). The portion of Julian Street between SR 87 and Market Street has been approved for realignment from a curved design to a part of the downtown grid. West of SR 87, Julian Street is a two-lane, two-way street.
- **The Alameda**. The Alameda is a four-lane arterial street generally running east-west in the vicinity of the project. It transitions into Santa Clara Street, which provides access to the site via Autumn Street.
- **Santa Clara Street**. Santa Clara Street is a four-lane arterial street that is one of the main streets in downtown San Jose. It transitions to The Alameda to the west and provides access to the HP Pavilion.
- **San Fernando Street**. San Fernando Street is two-lane collector street that runs along the northern boundary of the site. It provides access between downtown San Jose and the Diridon train station, where it ends.
- **Park Avenue**. Park Avenue is a four-lane local street in the downtown area and then transitions to a two-lane designated arterial to the west. Park Avenue runs along the southern edge of the stadium site.
- **San Carlos Street**. San Carlos Street is a four-lane arterial street that runs between downtown San Jose and the western part of the city.
- **Auzerais Avenue**. Auzerais Avenue is a two-lane collector street. It provides a connection between the stadium site and the SR 87 interchange at Woz Way.
- **Woz Way**. Woz Way is a relatively short two-lane local street that parallels the east side of SR 87. There is a northbound off-ramp from SR 87 to Woz Way that serves the downtown area, including the stadium site.

(2) Existing Bicycle Facilities. In the vicinity of the site, Bird Avenue, Montgomery Street, and Autumn Street are designated bike routes (see Figure V.C-2). Bike lanes recently have been added to San Fernando Street, and bike lanes are planned for Park Avenue. A multiuse pedestrian and

Figure V.C-2: Existing Bicycle Facilities

8½ x 11 B+W

bike trail is planned along Los Gatos Creek, which is just east of the stadium site. Another facility in the area that might be used to access the stadium is the multiuse trail along the Guadalupe River through downtown.

(3) Existing Transit Service. The stadium site is adjacent to the Diridon train station, which is served by numerous bus, LRT, and commuter rail routes. These transit services are described below and shown in Figure V.C-3.

Table V.C-3: Existing Bus Lines

Location /Route	Route Description	Commute Hour Headways
At Diridon Station		
63	Almaden Valley to San Jose State University	30
64	Almaden LRT Station to Penitencia Creek Transit Center	20
65	Almaden LRT Station to San Jose State University	30
68	Gilroy/Gavilan College to Diridon Station	15
180	Fremont BART Station to Diridon Station	15
Hwy 17	Santa Cruz/Scotts Valley to San Jose	30
DASH	Downtown Shuttle	10
On the Alameda (two blocks)		
22	Eastridge Transit Center to Palo Alto/Menlo Park	10
305	South San Jose to Downtown Mountain View	60
522	Eastridge Transit Center to Palo Alto Transit Center	15

Source: Hexagon Transportation Consultants, 2006.

Bus Service. The Diridon station is served by six bus routes and the DASH shuttle (see Table V.C-3). In addition, three more bus routes are only two blocks away on The Alameda. Local routes 22, 63, 64, 65, and 68 provide connections throughout Santa Clara County and operate with 15 to 30 minute headways during peak hours. Routes 64 and 68 operate until around midnight, including on weekends, and Route 22 operates 24-hours a day, seven days a week. Route 180 provides express service to the Fremont BART station and operates seven days a week until midnight, generally on 30-minute headways. The Highway 17 shuttle provides express service to Santa Cruz seven days per week until 10:00 p.m., generally on 60-minute headways. Route 305 provides express service during commute hours only. Route 522 provides express service along the same route as Route 22 weekdays and Saturdays with 15 minute headways until 8:00 p.m. The DASH shuttle provides local service within downtown San Jose on weekdays during the daytime only (no night or weekend service).

Light Rail Transit (LRT) Service. The Diridon station is served by the Vasona LRT line. The Vasona Line provides service between downtown San Jose and Campbell/Los Gatos. Riders on the Guadalupe, Tasman, or Capitol LRT lines can transfer to the Vasona Line at the Convention Center station, or they could take the DASH shuttle to the stadium from that point. The Vasona line operates until midnight seven days a week, generally on 30-minute headways.

Rail Service. The Diridon station is served by Caltrain, ACE, and AMTRAK trains. The ACE and AMTRAK services do not run at night, so they would not be an option for most ball games. Caltrain service runs seven days a week until midnight, usually on one-hour headways. Caltrain provides rail service between San Jose and San Francisco. During weekday commute hours, Caltrain also operates south to Gilroy.

(4) Existing Traffic Conditions. New manual turning-movement counts were conducted in November 2005 at all study intersections. The counts were conducted on a night with no event at the HP Pavilion. The new traffic count data are shown graphically in Figure V.C-4 and are included in

Figure V.C-3: Existing Transit Service

8½ x 11 Color

back of Figure V.C-3

Figure V.C-4: Existing Traffic Volumes – Single-Event Scenario, 5:00 to 6:00 p.m.

8½ x 11 B+W

the Traffic Impact Analysis (Appendix C of this EIR. Detailed volume summary tables, which include the existing traffic volumes and count dates for all study intersections, are also provided there.

The traffic counts were used to calculate existing levels of service at the study intersections. The existing lane configurations were provided by City staff and confirmed by field observations. Table V.C-4 shows that all the study intersections currently operate at LOS D or better, which is acceptable by City and CMP standards.

Freeway traffic counts and level of service designations under existing conditions were obtained from the 2004 CMP Monitoring and Conformance Report. Table V.C-5 shows that during the PM peak hour both study segments on SR 87 operate at LOS F in the southbound direction, and two study segments on I-280 in the eastbound direction operate at LOS F. This is worse than the standard of LOS E.

Table V.C-4: Existing Intersection Level of Service Summary: 5:00 to 6:00 p.m. – Single-Event Scenario

Intersection	Count Date	5:00 to 6:00 p.m.	
		LOS	Average Delay
SR 87 and Julian Street (E)*	11/1/05	D	38.3
SR 87 and Julian Street (W)*	11/1/05	C	21.0
SR 87 and W. Santa Clara Street*	11/1/05	B	16.7
I-280 and Bird Avenue (N)*	11/1/05	C	26.2
I-280 and Bird Avenue (S)*	11/1/05	C	24.5
Autumn S. and W. Santa Clara St.*	11/1/05	B	18.3
Bird Ave. and W. San Carlos St.*	11/1/05	D	36.4
SR 87 and Woz Way	11/15/05	A	9.8
Autumn Street and San Fernando	11/1/05	B	10.4
Bird Avenue and Auzerais Avenue	11/1/05	C	24.5
Delmas Ave. and Auzerais Ave.	11/1/05	B	15.6
Woz Way and Auzerais Avenue	11/1/05	B	18.6
Delmas Avenue and Park Avenue	11/15/05	C	28.1
Delmas Ave. and W. San Carlos St.	11/1/05	C	20.1
Autumn Street and Park Avenue	11/1/05	C	34.8
Woz Way and Park Avenue	11/1/05	B	18.4
Woz Way and W. San Carlos St.	11/1/05	C	20.4
Delmas Ave. and San Fernando St.	11/1/05	B	16.5

Note: **Bold** indicates a significant project impact.

* Denotes CMP intersection.

Source: Hexagon Transportation Consultants, 2006.

(5) Existing Parking Facilities.

The proposed project would rely on parking spaces at the proposed stadium (150), at the proposed new stadium parking garage (1,200), existing parking facilities in the Diridon/Arena area, as well as garages and lots in the Downtown area east of SR 87. An inventory of existing parking facilities in these areas (stratified by distance from the project) is provided in Table V.C-6. Figure V.C-5 shows the location and capacity of existing off-street parking facilities. Within ¾ miles from the stadium, a total of 21,072 parking spaces currently exist to the north and east of the project site. Assuming that these spaces are 25 percent occupied in the evening without an event at the HP Pavilion, there are an estimated 15,804 available parking spaces for the stadium.

Table V.C-5: Freeway Existing Level of Service – PM Peak Hour

Freeway	Location	Mixed Flow					
		Dir.	Lanes	Speed	Volume	Density	LOS
SR 87	Julian St. to Coleman Ave.	NB	2	67	2,280	17.0	B
		SB	2	18	3,200	88.9	**F**
	I-280 to Julian St.	NB	2	67	1,880	14.0	B
		SB	2	9	2,160	120.0	**F**
	Alma Ave. to I-280	NB	2	65	4,030	31.0	D
		SB	2	16	2,980	93.1	**F**
I-280	Meridian Ave. to Bird Ave.	EB	4	26	7,380	71.0	**F**
		WB	4	36	8,060	56.0	E
	Bird Ave. to SR 87	EB	4	23	6,990	76.0	**F**
		WB	3	66	4,750	24.0	C
	SR 87 to 10th St.	EB	3	67	3,620	18.0	C
		WB	3	67	2,810	14.0	B
	10thSt. to McLaughlin	EB	4	45	8,640	48.0	E
		WB	4	66	7,390	28.0	D

Note: **Bold** indicates a significant project impact.

Source: Hexagon Transportation Consultants and Santa Clara Valley Transportation Authority, *Congestion Management Program 2004 Monitoring and Conformance Report.*

Figure V.C-5 Existing Off-Street Parking Facilities

8.5 x 11 color

back of Figure V.C-5

Table V.C-6: Stadium Parking Facilities

	Facility Name	Type	Unrestricted Parking Capacity
Off-Street Parking Facilities Within ⅓ Mile Radius			
18	Arena Lot D	Public	228
19	San Jose Water Lot (West)	Private w/Public Access	280
20	San Jose Water Lot (East)	Public	575
21	Santa Clara/SR 87*	Public	188
42	Park Center Plaza III	Private w/Public Access	1,320
47	Cahill Lot 4	Public	149
49	Cahill Lot 1	Public	180
50	Cahill Lot 2	Public	162
51	Cahill Lot 3	Public	90
56	Palermo Lot	Private w/Public Access	25
57	Power Play Hockey Lot	Private w/Public Access	14
59	Water District Lot	Private w/Public Access	70
		Subtotal	*3,281*
Off-Street Parking Facilities Within ⅔ Mile Radius			
1	Market/San Pedro Garage	Public	1,393
4	Ernst & Young Garage	Private w/Public Access	400
10	Comerica – 333 W. Santa Clara	Private w/Public Access	736
14	Auzerais Lot*	Public	71
24	Fairmont Plaza	Private w/Public Access	626
25	10 Almaden	Private w/Public Access	700
26	Opus West – 225 W. Santa Clara	Private w/Public Access	805
27	160. W. Santa Clara	Private w/Public Access	461
29	95 S. Market Street	Private w/Public Access	95
32	Park Center Plaza I	Private w/Public Access	1,066
33	Adobe	Private w/Public Access	1,104
34	Riverpark	Private w/Public Access	1,413
35	San Pedro Square	Private w/Public Access	125
37	California Bank & Trust – 84 W. Santa Clara	Private w/Public Access	35
38	National Lot (1 South Market Street)	Private w/Public Access	81
40	Plaza Lot (San Pedro/St. James)	Private w/Public Access	195
43	Terraine Lot	Private w/Public Access	85
44	Arena Lots A, B and C	Public	1,422
45	Crowne Plaza Garage	Private w/Public Access	276
46	Notre Dame Lot (NW c/o Notre Dam/St. John)	Private w/Public Access	94
48	Almaden/Woz Lot	Public	365
55	Milligan Lot	Private w/Public Access	45
58	Woz/87 Lot	Public	283
60	Convention Center	Public	675
		Subtotal	*12,551*
Off-Street Parking Facilities Within ¾ Mile Radius			
5	2nd/S. Fernando (Block 2)	Public	154
7	Market/San Carlos (Block 8)	Public	92
11	Market/San Salvador Lot	Public	137
17	Autumn St. Lot (Akatiff Lot)	Private w/Public Access	523
22	Pavilion Garage	Private w/Public Access	261
28	60 S. Market Street	Private w/Public Access	814
30	Community Towers	Private w/Public Access	70

Table V.C-6 *continued*

Facility Name	Type	Unrestricted Parking Capacity
39 Victory Parking	Private w/Public Access	439
61 Almaden/Balbach Lot	Public	45
	Subtotal	*2,535*
Proposed New Parking		
62 Proposed Stadium On-Site Parking	Public	150
63 Proposed Stadium Parking Lot	Public	1,200
On-Street Parking		
Within ½ Mile of HP Pavilion		1,355
	Total Within ¾ Mile Radius	*21,072*
Off-Street Parking Facilities Outside ¾ Mile Radius		
2 Third Street Garage	Public	837
3 2nd/S. Carlos Garage	Public	544
6 3rd/S. Fernando (Block 3)	Public	156
9 4th Street Garage	Public	750
12 2nd/St. James (Oasis Lot)	Public	138
13 First/St. James Lot	Public	37
15 San Pedro/Bassett Lot	Public	118
16 First/Julian Lot	Public	81
23 Colonade (201 S. Fourth)	Private w/Public Access	145
31 Second/San Carlos (Behind McDonalds)	Private w/Public Access	100
36 Fountain Alley	Private w/Public Access	149
41 Valley Title	Private w/Public Access	294
52 SJ State University 10th Street Garage	Public	1,927
53 SJ State University 4th Street Garage	Public	1,136
54 SJ State University 7th Street Garage	Public	1,980
64 First Street and I-280 Lot	Public	113
New City Hall Garage	Public	372
City Hall Employee Garage	(under construction)	1,132
	Subtotal	*10,009*
	TOTAL	**31,081**

[a] Does not include parking facilities west of the project site.

Source: Hexagon Transportation Consultants, 2005.

e. Background Conditions. Background conditions are defined as conditions just prior to completion of the proposed development. Estimated traffic volumes for background conditions comprise volumes from existing (or base) traffic volumes plus traffic generated by other approved developments in the vicinity of the site. This section describes the procedure used to determine background traffic volumes and the resulting traffic conditions that would result.

(1) Background Transportation Network. Background conditions assume the completion of the Autumn Street extension to Coleman Avenue. The Autumn Street extension incorporates a new crossing of the Southern Pacific railroad tracks. This crossing and the intersection of Autumn Street with Coleman Avenue currently are under construction as part of the Cousins MarketCenter retail project, along Coleman Avenue. The section of roadway from the railroad crossing south to the current terminus of Autumn Street is under design. This network change will not affect the existing lane configuration at any of the study intersections. However, the new roadway connection will alter traf-

fic patterns within the study area. The changes in existing traffic volumes caused the by extension of Autumn Street were estimated using the City's TRANPLAN model.

Year 2000 trip tables were assigned to the roadway network without and with the planned Autumn Street extension. The model runs show that extending Autumn Street to Coleman Avenue and thereby providing a direct connection to I-880 would cause traffic to divert to Autumn Street from other parallel routes, including Stockton Avenue, The Alameda, SR 87, Market Street and North First Street. The estimated changes in turning-movement volumes at the study intersections resulting from the Autumn Street extension are shown separately in the volume summary tables provided in Appendix C. With the above exception, it is assumed in this analysis that the transportation network under background conditions would be unchanged from existing conditions.

(2) Background Intersection Analysis. Background traffic volumes were calculated by adding to the existing volumes the traffic reassignment resulting from the planned Autumn Street Extension and the estimated traffic from approved but not yet constructed developments in the vicinity of the site. Estimates of the added traffic from approved but not yet constructed developments were provided by the City in the form of the Approved Trips Inventory (ATI). The ATI data are included in Appendix C. Trips added from the above-described sources were added to the existing volumes and background traffic volumes were calculated.

The level of service calculations for the background scenarios (Table V.C-7) shows that the following two intersections would degrade to unacceptable levels during the 5:00 to 6:00 p.m time period: Delmas and Park (LOS F) and Delmas and San Fernando (LOS F). The reason for this degradation is the addition of trips, but not the associated mitigation measures, from the approved project on the San Jose Water Company site. The San Jose Water Company traffic study identified improvements for these LOS F intersections. However, since the intersections are exempt from the LOS Policy, the City may or may not require the improvements. All other study intersections, including the six CMP intersections, would operate at acceptable levels under background conditions.

Background traffic volumes are shown in Figure V.C-6.

Table V.C-7: Background Intersection Level of Service Summary: 5:00 to 6:00 p.m. – Single-Event Scenario

Intersection	Count Date	5:00 to 6:00 p.m.			
		Existing		Background	
		LOS	Average Delay	LOS	Average Delay
SR 87 & Julian St. (E)*	11/1/05	D	38.3	D	42.1
SR 87 & Julian St. (W)*	11/1/05	C	21.0	C	23.1
SR 87 & W. Santa Clara St.*	111/1/05	B	16.7	B	18.3
I-280 & Bird Ave. (N)*	11/1/05	C	26.2	C	32.4
I-280 & Bird Ave. (S)*	11/1/05	C	24.5	C	27.6
Autumn St. & W. Santa Clara St.*	11/1/05	B	18.3	C	32.2
Bird Ave. & W. San Carlos St.*	11/1/05	D	36.4	D	39.8
SR 87 & Woz Way	11/15/05	A	9.8	B	10.1
Autumn St. & San Fernando	11/1/05	B	10.4	B	11.3
Bird Ave. & Auzerais Ave.	11/1/05	C	24.5	C	33.5
Delmas Ave.& Auzerais Ave.	11/1/05	B	15.6	B	16.2
Woz Way & Auzerais Ave.	11/1/05	B	18.6	C	20.0
Delmas Ave.& Park Ave.	11/15/05	C	28.1	F	160.7
Delmas Ave. & W. San Carlos St.	11/1/05	C	20.1	C	25.1
Montgomery St. & Park Ave.	11/1/05	C	34.8	D	37.5
Woz Way & Park Ave.	11/1/05	B	18.4	C	21.4
Woz Way & W. San Carlos St.	11/1/05	C	20.4	C	22.3
Delmas Ave. & San Fernando St.	11/1/05	B	16.5	F	103.0

Note: **Bold** indicates a significant project impact. * Denotes CMP intersection.
Source: Hexagon Transportation Consultants, 2006.

Figure V.C-6: Background Traffic Volumes – Single-Event Scenario, 5:00 to 6:00 p.m.

8½ x 11 B+W

2. Project Impacts and Mitigation Measures

This section describes significant project impacts, and measures that are recommended to mitigate project impacts. Included are descriptions of the significance criteria that define an impact, estimates of project-generated traffic, identification of the impacts, and descriptions of the mitigation measures. Project conditions are represented by background traffic conditions with the addition of traffic generated by the project.

a. Criteria of Significance. For the purposes of this EIR, the proposed project would be said to create a significant adverse impact if it were to exceed any of the thresholds described below.

(1) City of San Jose Definition of Significant Intersection Impacts. The project is said to create a significant adverse impact on traffic conditions at a study 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 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 or more seconds ***and*** the demand-to-capacity ratio (V/C) to increase by .01 or more.

All of the study intersections are located within the Greater Downtown Core (defined by the area formed by Coleman Avenue/Julian Street/St. James Street to the north, 4th Street and Civic Plaza to the east, I-280 to the south, and White Street/Stockton Avenue/Southern Pacific Railroad tracks to the west) which is exempt from the City of San Jose level of service policy. The policy states …the Downtown Core Area is exempted from traffic mitigation requirements. Intersections within and on the boundary of this area are also exempted from the LOS "D" Performance Criteria. Nevertheless, for this analysis, all the study intersections were evaluated following standard LOS Policy procedures in order to disclose the level of service of the surrounding signalized intersections under the project traffic conditions.

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

(2) CMP Definition of Conformance. A CMP intersection is out of conformance with the acceptable LOS standard when the level of service falls below LOS E. That is, a project is considered in violation of the CMP level of service standard when the addition of project traffic causes the intersection's level of service to deteriorate from an acceptable LOS E or better under background conditions to an unacceptable LOS F under project conditions or the level of service at the intersection is an unacceptable F under background conditions and the addition of project trips causes both the critical-movement delay at the intersection to increase by four or more seconds and the volume-to-capacity ratio (V/C) to increase by 0.01 or more. The CMP standard is said to be in conformance when measures are implemented that would restore intersection conditions to LOS E or better.

(3) CMP Definition of Significant Freeway Segment Impacts. According to the CMP, a project is said to create a significant adverse impact on traffic conditions on a CMP freeway segment if for either peak-hour:

1. The level of service on the freeway segment degrades from an acceptable LOS E or better under existing conditions to an unacceptable LOS F under project conditions, or

2. The level of service on the frewway segment is an unacceptable LOS F under project conditions, and the number of project trips on that segment constitutes at least one percent of capacity on that segment.

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

Additonal City of San Jose significance criteria follow:

- Substantially increase hazards due to a design feature or incompatible uses;
- Conflict with adopted policies, plans or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks, pedestrian paths or trails);
- Result in inadequate parking capacity; or
- Result in inadequate emergency access.

b. Transportation Network Under Project Conditions. The proposed project would include several changes to the existing transportation network that would affect existing traffic patterns in the study area. These improvements are necessary to accommodate the ballpark design and associated traffic.

- Montgomery Street, between W. San Fernando Street and Park Avenue would be abandoned;
- Otterson Street, west of Montgomery Street also would be abandoned;
- Autumn Street, between W. Santa Clara Street and Park Avenue would be converted from a one-way (northbound) street to a two-way street; and
- The remaining segment of Montgomery Street, between W. Santa Clara Street and W. San Fernando Street, would also be converted from a one-way (southbound) street to a two-way street.

The extension of Autumn Street north to Coleman Avenue was assumed as a background improvement. If it is not built prior to completion of the stadium, then the Autumn Street extension would need to be part of the stadium project.

The changes in vehicular traffic patterns associated with these network changes were estimated based on existing travel patterns in the vicinity. These changes are expected to affect traffic volumes at only the following two study intersections: Autumn Street at W. Santa Clara Street and Autumn Street at W. San Fernando Street. Figure V.C-7 presents the estimated change in background turning movement volumes at these intersections resulting from the proposed closure of a segment of Montgomery Street (and conversion to two-way flow on Autumn and Montgomery Streets). The volume summary sheets in Appendix C show the same information in tabular form.

Figure V.C-7: Background Trip Reassignment for Montgomery Street Closure –Single-Event Scenario, 5:00 to 6:00 p.m.

8½ x 11 B+W

Project-sponsored improvements also include modifications to the Bird Avenue corridor from Park Avenue to I-280. The proposed Bird Avenue improvements include the addition of a second northbound left-turn lane at the Bird Avenue/San Carlos Street intersection and the conversion of the third southbound through lane to a second left-turn lane at the Bird Avenue/I-280 (S) intersection. These roadway improvements are not expected to change existing traffic patterns.

The transit network under project conditions is assumed to remain unchanged. The extension of BART to the Diridon Station is currently in the planning process, but the completion date is still 10-15 years away. Therefore, the BART extension is not assumed in the analysis.

c. 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 two analyses time periods. 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 and intersections. These procedures are described further in the following sections.

(1) Trip Generation. Project trip generation estimates were prepared based on the stadium capacity (45,000 seats) and a no-show rate of 6 percent. The no-show rate is consistent with the actual attendance observed at other baseball stadiums during a sell-out game. Including players, coaches, staff, concession employees, and media personnel (approximately 1,560 people), the total attendance for a sell-out game is estimated to be 43,860.

The travel characteristics of fans attending a weeknight Major League Baseball game at the proposed stadium are expected to be similar to that of fans attending a weeknight National Hockey League game at the HP Pavilion. In order to estimate the travel mode by which spectators would arrive and depart the stadium, the EIR's transportation subconsultant (Hexagon Transportation Consultants of San Jose) conducted an intercept survey of attendees at a San Jose Sharks hockey game (7:30 p.m. start time) on Wednesday, November 16, 2005. The survey identified the travel mode and auto occupancy (number of persons per vehicle) of over 1,400 hockey fans on their way to the game. A large majority of fans traveled to the game in private automobiles (91.1 percent). Of those traveling by private auto, the average auto occupancy was 2.3 people per vehicle. Private auto trips include fans who travel directly to the parking facility (89.5 percent), fans who are dropped off at the game by another fan before parking in an off-site location (1.0 percent), and fans who are dropped off at the game by someone not attending the game (0.6 percent). Public transit services (CalTrain and light rail) accounted for 4.5 percent of the inbound trips. Bus service accounted for a negligible number of trips. The remaining trips included fans walking to the game (3.2 percent), riding in a limousine or taxi (1.1 percent) or bicycling (0.1 percent).

The planned BART extension to San Jose would locate a station within one block of the HP Pavilion and the stadium. Although BART is not assumed in this analysis, the added rail service could be expected to significantly increase transit use.

Because the attendance at a sell-out Major Leage Baseball game would be several times that of a hockey game, the parking facilities used by baseball fans would need to include many downtown parking facilities that are more distant than those typically used by hockey fans arriving at the HP Pavilion. The longer walking times from these more distant parking facilities would encourage some fans to take public transit rather than driving. Thus, it is likely that with no change in transit services, a higher percentage of baseball fans would choose public transit than is currently observed for a hockey game. However, to be conservative (i.e., in order to insure that adverse impacts are not underestimated), the baseball stadium traffic analysis assumes the same mode split and vehicle occupancy as observed for a weekday evening hockey game. Table V.C-8 presents the project trip generation estimates during the pre-game arrival period for a weekday evening game. To be conservative, the trips generated by the existing uses on the project site that would be replaced by the baseball stadium and parking garage were not subtracted from the traffic that would be generated by the proposed stadium.

Table V.C-8: Project Trip Generation Estimates for a Weekday Evening Game (Arrivals)

Stadium Attendance by Mode[a]		Persons	Average Occupancy (Persons/ Vehicle)	Pre-Game Vehicle Trips	
				In	**Out**
Auto	90.5%	39,693	2.3	17,258	0
Public Transit	4.5%	1,974	–	–	–
Walk/Bicycle	3.3%	1,447	–	–	–
Charter Bus, Taxi & Limo	1.1%	482	3.0	161	161
Drop-Off/Pick-Up	0.6%	263	2.3	114	114
Total		**43,860**		**17,533**	**275**

[a] Total projected attendance for sold out weekday night game, including fans, team personnel, concessions employees, and media personnel.

Source: Hexagon Transportation Consultants, 2006.

The commercial space on the ground floor of the proposed new parking garage and/or at the stadium is assumed to be occupied by ancillary uses that on game nights would be entirely supported by game attendees. Thus, the commercial space is not expected to add to the number of vehicle trips generated by the project during the pre-game period.

The percentage of baseball fans arriving within a specific time period was determined based on the arrival pattern observed for a San Jose Sharks game. Intersection turning-movement counts along major access routes were compared on a day with no event at the HP Pavilion (11/1/05) and a day with a Sharks hockey game (11/2/05) to identify the number of trips at each location generated by the hockey game and the percentage of hockey trips occurring within each hour. Based on this arrival pattern observed for a weekday evening hockey game, it is estimated that 29 percent of the baseball game attendees would arrive one to two hours before the game start time (5:00 to 6:00 p.m.) and 59 percent of attendees would arrive less than one hour before the game start time (6:00 to 7:00 p.m.). The remaining attendees are expected to arrive more than two hours before the game start time (3 percent) or after the game start (9 percent). This arrival pattern is consistent with that observed at other baseball stadiums. For fans being dropped off at the game, the percentage of early arrivals (more than one hour before the game) is expected to be less than that of fans who drive and park. Conversely, it is assumed that 100 percent of players, coaches, staff, concession employees and media personnel would arrive more than two hours before the game.

(2) Trip Distribution. The distribution of trips generated by the proposed project was estimated based on the residence zip codes of existing San Jose Sharks season ticket holders and a comparison of the existing traffic volumes on weekday evenings without and with a hockey game at the HP Pavilion. A majority of project trips are expected to arrive and depart via I-280 and/or SR 87 (65 percent). It should be noted that the project trip distribution assumes completion of the Autumn Street

extension to Coleman Avenue, which provides direct access to and from I-880. The trip distribution patterns are shown graphically on Figure V.C-8.

(3) Trip Assignment. Project trips were assigned to the roadway system in accordance with the trip distribution patterns discussed above and based on the location and size of available parking facilities. It is assumed that the proposed new stadium parking garage would be accessed primarily via Bird Avenue with both left and right turns allowed for inbound movements and only right turns permitted for outbound traffic. The proposed parking garage would also have right-turn only access to and from Park Avenue. Passenger drop off and pick up activities are expected to occur within the on-street parking areas on Montgomery Street just north of the project site.

Table V.C-9 presents a breakdown of project trips by location and time period. The volume summary sheets provided in Appendix C show the resulting project trip assignment at each study intersection. Figure V.C-9 graphically presents the trips generated by the proposed baseball stadium at each study intersection.

d. Project Traffic Volumes. Project trips, as represented in the above project trip assignment, were added to background traffic volumes. The background traffic reassignment resulting from the roadway network changes included in the proposed project were also added to obtain traffic volumes under project conditions. Figure V.C-10 presents the estimated intersection turning-movement volumes at each study intersection under project conditions.

e. Project Intersection Level of Service Analysis. The intersection level of service results under existing, background and project scenarios for the hour from 5:00 to 6:00 p.m. are presented in Table V.C-10. The level of service calculation sheets are included in Appendix C.

(1) City of San Jose Level of Service Analysis. The results of the level of service analysis under project conditions show that two of the study intersections would be significantly impacted by the project, according to the significance criteria listed above.

Impact TRANS-1: The level of service at Delmas Avenue and Park Avenue would degrade from background LOS F conditions. This condition constitutes a significant impact by City of San Jose standards. (S)

This intersection is expected to operate at LOS F during the hour from 5:00 to 6:00 p.m. hour under background conditions. The added vehicular and pedestrian traffic resulting from the proposed project would cause the critical-movement delay to increase by four or more seconds. The critical V/C ratio calculated by TRAFFIX with the minimum pedestrian timing does not accurately reflect the increase in vehicular demand at this intersection. Based on the minimum vehicular green times, the critical V/C ratio would increase by 0.01 or more. The addition of project-generated trips during the hour from 6:00 to 7:00 p.m. would cause the intersection to degrade from LOS D under background conditions to LOS F under project conditions. Based on the City of San Jose's level of service impact criteria, the proposed baseball stadium would cause a significant impact at this intersection during both of the hours analyzed. However, as described previously, this study intersection is located within the Greater Downtown Core (defined by the area formed by Coleman Avenue/Julian Street/St. James Street to the north, 4th Street and Civic Plaza to the east, I-280 to the south, and White Street/Stock-

Figure V.C-8: Project Trip Distribution

8½ x 11 B+W

Table V.C-9: Project Trip Estimates by Location and Time Period for a Weekday Evening Game (Arrivals) – Single-Event Scenario

Destination/Time Period		Pre-Game Vehicle Trips	
		In	Out
On-Site Stadium Parking	150 spaces		
Prior to 5 pm	100%	150	0
5 pm – 6 pm	0%	0	0
6 pm – 7 pm	0%	0	0
After 7 pm	0%	0	0
Stadium Parking Garage	1,200 spaces		
Prior to 5 pm	7%	89	0
5 pm – 6 pm	28%	332	0
6 pm – 7 pm	56%	676	0
After 7 pm	9%	103	0
HP Pavillion Main Lot	1,422 spaces		
Prior to 5 pm	3%	43	0
5 pm – 6 pm	29%	412	0
6 pm – 7 pm	59%	839	0
After 7 pm	9%	128	0
Cahill Lots 1-4	581 spaces		
Prior to 5 pm	3%	17	0
5 pm – 6 pm	29%	168	0
6 pm – 7 pm	59%	343	0
After 7 pm	9%	53	0
HP Pavillion Lot D + Private Lots	339 spaces		
Prior to 5 pm	3%	10	0
5 pm – 6 pm	29%	248	0
6 pm – 7 pm	59%	504	0
After 7 pm	9%	77	0
SJ Water Company Lots	855 spaces		
Prior to 5 pm	3%	26	0
5 pm – 6 pm	29%	248	0
6 pm – 7 pm	59%	504	0
After 7 pm	9%	77	0
Akatiff & Milligan Lots	568 spaces		
Prior to 5 pm	3%	17	0
5 pm – 6 pm	29%	165	0
6 pm – 7 pm	59%	335	0
After 7 pm	9%	51	0
Downtown parking east of SR 87	12,143 spaces		
Prior to 5 pm	3%	364	0
5 pm – 6 pm	29%	3,521	0
6 pm – 7 pm	59%	7,164	0
After 7 pm	9%	1,094	0
Passenger Loading Zone			
Prior to 5 pm	1%	3	3
5 pm – 6 pm	10%	28	28
6 pm – 7 pm	80%	220	220
After 7 pm	9%	25	25
Total Trips By Time Period			
Prior to 5 pm	4%	718	3
5 pm – 6 pm	28%	4,972	28
6 pm – 7 pm	59%	10,281	220
After 7 pm	9%	1,562	25
Total		**17,533**	**275**

Source: Hexagon Transportation Consultants, 2005.

Figure V.C-9: Project Generated Trips – Single-Event Scenario

8½ x 11 B+W

Figure V.C-10: Traffic Volumes with Project – Single-Event Scenario, 5:00 to 6:00 p.m.

8½ x 11 B+W

Table V.C-10: Project Intersection Levels of Service – 5:00 to 6:00 p.m. – Single-Event Scenario

Intersection	Count Date	Existing		Background		Project Conditions				With Mitigation	
		LOS	Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	Crit. V/C Change	Avg. Crit. Delay Change	LOS	Avg. Delay
SR 87 and Julian Street (E)*	11/1/2005	D	38.3	D	42.1	D	46.1	0.066	3.8		
SR 87 and Julian Street (W)*	11/1/2005	C	21.0	C	23.1	C	24.1	0.028	0.9		
SR 87 and W. Santa Clara Street*	111/1/2005	B	16.7	B	18.3	C	24.3	0.289	6.9		
I-280 and Bird Avenue (N)*	11/1/2005	C	26.2	C	32.4	C	33.6	0.025	6.0		
I-280 and Bird Avenue (S)*	11/1/2005	C	24.5	C	27.6	C	34.2	-0.007	3.1		
Autumn Street and W. Santa Clara Street*	11/1/2005	B	18.3	C	32.2	D	35.4	-.0.053	3.9		
Bird Avenue and W. San Carlos Street*	11/1/2005	D	36.4	D	39.8	D	41.2	0.044	3.6		
SR 87 and Woz Way	11/15/2005	A	9.8	B	10.1	B	10.3	0.111	-0.5		
Autumn Street and San Fernando	11/1/2005	B	10.4	B	11.3	C	32.4	0.237	20.3		
Bird Avenue and Auzerais Avenue	11/1/2005	C	24.5	C	33.5	C	33.0	0.012	1.0		
Delmas Avenue and Auzerais Avenue	11/1/2005	B	15.6	B	16.2	B	16.2	0.001	0.0		
Woz Way and Auzerais Avenue	11/1/2005	B	18.6	C	20.0	B	16.0	0.010	-0.1		
Delmas Avenue and Park Avenue	11/15/2005	C	28.1	F	160.7	**F**	**167.2**	**0.072**	**21.0**	E	62.8
Delmas Avenue and W. San Carlos Street	11/1/2005	C	20.1	C	25.1	C	26.4	0.050	2.2		
Autumn Street and Park Avenue	11/1/2005	C	34.8	D	37.5	D	38.5	0.056	2.0		
Woz Way and Park Avenue	11/1/2005	B	18.4	C	21.4	C	20.3	0.102	-1.2		
Woz Way and W. San Carlos Street	11/1/2005	C	20.4	C	22.3	C	23.7	0.115	2.0		
Delmas Avenue and San Fernando Street	11/1/2005	B	16.5	F	103.0	**F**	**117.9**	**0.019**	**8.0**	C	29.8

* Denotes CMP intersection.

Note: **Bold** indicates a significant project impact.

Source: Hexagon Transportation Consultants, 2006.

ton Avenue/Southern Pacific Railroad tracks to the west) which is exempt from the City of San Jose level of service policy.

> Mitigation Measure TRANS-1: The congestion at this intersection could be mitigated by adding a second southbound through lane on Delmas Avenue. The recommended lane addition would require widening the curb-to-curb roadway width by approximately 2 feet. This could be accomplished by acquiring additional right-of-way (ROW) along the east side of Delmas Avenue, or, if additional ROW cannot be acquired, by removing on-street parking on the east side of Delmas Avenue. It should be noted that the same improvement was identified as a mitigation measure for the San Jose Water Project. Based on the City's standards, the recommended improvements would satisfactorily mitigate the project impact. (LTS)

Impact TRANS-2: The level of service at Delmas Avenue and W. San Fernando Street would degrade from background LOS F conditions. This condition constitutes a significant impact by City of San Jose standards. (S)

This intersection is expected to operate at LOS F during the hour from 5:00 to 6:00 p.m. under background conditions. The added vehicular traffic resulting from the proposed project would cause the critical-movement delay to increase by four or more seconds and the critical V/C ratio would increase by 0.01 or more. However, as described previously, this study intersection is located within the Greater Downtown Core (defined by the area formed by Coleman Avenue/Julian Street/St. James Street to the north, 4th Street and Civic Plaza to the east, I-280 to the south, and White Street/Stockton Avenue/Southern Pacific Railroad tracks to the west) which is exempt from the City of San Jose level of service policy.

> Mitigation Measure TRANS-2: The congestion at this intersection could be mitigated by adding a second southbound through lane on Delmas Avenue. The recommended lane addition would require widening Delmas north of San Fernando by approximately 12 feet and south of San Fernando by two feet. It should be noted that the same improvement was identified as a mitigation measure for the San Jose Water Project, from which ROW dedication would be required. With the recommended improvement, the average vehicular delays at this intersection would be reduced to the LOS C range during the analysis period. Based on the City's standards, the recommended improvements would satisfactorily mitigate the project impact. (LTS)

(2) CMP Level of Service Analysis. Measured against the CMP standards, none of the CMP study intersections would be significantly impacted by the proposed project.

f. Project Freeway Segment Analysis. The study freeway segments were evaluated for only one hour: 5:00 to 6:00 p.m. Although project-generated traffic is expected to peak after 6:00 p.m., the overall traffic on the freeway system is expected to be greatest before 6:00 p.m. Traffic volumes on the study freeway segments between 5:00 and 6:00 p.m. were estimated for each project scenario by adding trips generated by the proposed project to existing volumes obtained from the 2004 CMP Annual Monitoring Report. The results of the analysis are summarized in Table V.C-11. The same freeway impacts would be experienced with or without a concurrent Sharks game at the HP Pavilion. This is true because a Sharks game does not add much traffic to the freeways between 5:00 p.m. and 6:00 p.m. (the games start at 7:30 p.m.). Also, project freeway impacts are based on an absolute volume increase, which is related to freeway capacity and not freeway volume.

Table V.C-11: Project Freeway Segment Levels of Service

Freeway	Location	Direc-tion	Existing Plus Project Trips					Project Trips		
			Mixed-Flow						Mixed-Flow	
			Lanes	Speed	Volume	Density	LOS	Total Volume	Volume	% Capacity
SR 87	Julian Street to Coleman Avenue	NB	2	67	2,283	17.0	B	3	3	0.07
		SB	2	18	3,697	102.7	**F**	497	497	**11.30**
	I-280 to Julian Street	NB	2	67	2,477	18.5	C	597	597	13.57
		SB	2	9	2,474	137.4	**F**	314	314	**7.14**
	Alma Avenue to I-280	NB	2	65	4,627	35.6	D	597	597	13.57
		SB	2	16	2,983	93.2	F	3	3	0.07
I-280	Meridian Avenue to Bird Avenue	EB	4	26	8,573	82.4	**F**	1,193	1,193	**12.97**
		WB	4	36	8,067	56.0	E	7	7	0.08
	Bird Avenue to SR 87	EB	4	23	8,092	88.0	**F**	1,102	1,102	**11.98**
		WB	3	66	4,816	24.3	C	66	66	0,96
	SR 87 to 10th Street	EB	3	67	4,245	21.1	C	625	625	9.06
		WB	3	67	3,554	17.7	B	744	744	10.78
	10th Street to McLaughlin Avenue	EB	4	45	8,645	48.0	E	5	5	0.051
		WB	4	66	8,335	31.6	D	945	945	10.27

Note: **Bold** indicates a significant adverse impact.

Source: Santa Clara Valley Transportation Authority Congestion Management Program 2004 Monitoring and Conformance Report.

Impact TRANS-3: State Route 87 would experience a significant impact from project traffic along two of the analyzed segments; I-280 would experience a significant impact from project traffic along two of the analyzed segments. (S)

The analysis shows that the following four freeway segments would be impacted under project conditions:

- SR 87 southbound between Coleman Avenue and Julian Street
- SR 87 southbound between Julian Street and I-280
- I-280 eastbound between Meridian Avenue and Bird Avenue
- I-280 eastbound between Bird Avenue and SR 87

Mitigation Measure TRANS-3: Improvements to mitigate significant project impacts on freeway segments are infeasible due to right-of-way constraints and the land use impacts associated with acquiring additional right-of-way. These impacts are therefore considered significant and unavoidable. (SU)

g. Project Impacts on Transit Facilities. Potential impacts on transit facilities were evaluated based on the mode usage data provided in the survey of a Sharks game in November 2005. The survey showed that 2.6 percent of attendees arrived via Caltrain and 1.9 percent arrived via LRT. The survey did not find anyone who arrived by VTA bus. Using a sold-out attendance figure of 43,860 for the stadium, which includes staff, yields an estimate of 1,140 persons arriving by Caltrain and 833 persons arriving by LRT. While no bus riders were found in the HP Pavilion survey, it is reasonable to assume that some attendees would use a VTA bus. Caltrain can accommodate about 1,000 riders per train, and there would be three trains arriving in the one hour before a game. Therefore, it appears that sufficient Caltrain capacity is available. Caltrain has demonstrated the ability to add extra trains when the situation warrants, for example, to serve Giants games in San Francisco. Each LRT "train" can accommodate about 300 passengers, and there would be 8 trains arriving in the one hour before a game (counting both directions). Therefore, there should be no problem accommodating the projected ridership. In summary, given the capacities of the Caltrain, LRT, and bus systems, the project would have no adverse impact on transit service.

Although not included in the analysis, a BART station is planned for eventual construction adjacent to the stadium site. This is part of the planned BART extension from Fremont, through San Jose, to Santa Clara. BART service would provide another transit option for stadium patrons. The planned BART station is well advanced in the design stage. The station would be underground, parallel to Santa Clara Street and about one block south. A parking structure is planned adjacent to the HP Pavilion to be used jointly by BART and the Pavilion. The parking structure would include a pedestrian bridge over Santa Clara Street. A bus transit center is planned in conjunction with the BART station. There are two alternate locations being

Other Scenarios

The City of San Jose Transportation Policy (CSJTP) defines the peak travel period to be the hour between 5:00 and 6:00 p.m. The analysis of potential adverse traffic impacts of the proposed stadium presented above is based on a single event at the stadium occurring during that peak hour. Two other scenarios have been analyzed by Hexagon Transportation Consultants and are presented in Chapters 6 and 7 of the transportation technical background report (provided as Appendix C of this EIR). Those scenarios are referred to as the "Project Peak Hour (6:00 – 7:00 p.m.)" scenario and the "Simultaneous Events" scenario.

While these two scenarios are not required to be analyzed under the CSJTP and would not result in impacts that require mitigation in the EIR, the following discussions briefly summarize the findings of those analyses. Please see Chapters 6 and 7 of Appendix C for detailed presentations of these scenarios.

Project Peak Hour (6:00 – 7:00 p.m.) Scenario. This scenario represents the period of highest trips for the proposed stadium project (but not the surrounding transportation network, which, by definition in the CSJTP, occurs between 5:00 and 6:00 p.m.) Similar trip generation, trip assignment and trip distribution steps were taken for this scenario as for the proposed project in the 5:00 to 6:00 p.m. peak hour. Study intersections were analyzed in terms of their levels of service. The results of that analysis show that four intersections would exhibit operational deficiencies under this scenario:

Autumn Street and San Fernando Street
Delmas Avenue and Park Avenue
Autumn Street and Park Avenue
Delmas Avenue and San Fernando Street

Simultaneous Events Scenario. The major league baseball season and the regular national hockey league season have two weeks overlap in April and 1 to 2 weeks overlap in September/October. Taking in account the potential for playoff games and other large (non-San Jose Sharks) events at the HP Pavilion, the number of large events occurring simultaneously can be calculated. This scenario examines the effects on traffic based upon the occurrence of a weekday evening baseball game with a simultaneous event at the HP Pavilion. It was determined that because of the typical arrival times, the 6:00 – 7:00 p.m. time period would experience the greatest impact from stadium traffic. Therefore, for the simultaneous-events scenario, only the 6:00 – 7:00 p.m. time period was analyzed. The results of that analysis show that the same four intersections would exhibit operational deficiencies under this scenario as under the single-event Project Peak Hour (6:00 – 7:00) scenario.

considered for the transit center: opposite the entrance to Diridon Station, or south of Diridon Station. The alternative south of the station would be precluded by the stadium, but the location near the entrance to Diridon Station would work well with the stadium. It would be immediately across the street from the stadium entrance. Based on a survey of other ballparks serviced by commuter rail, the transit mode split with BART can be estimated at approximately 15 percent. This mode split could be expected to come directly out of the auto share, thereby reducing total auto trips approximately 11 percent. The effect on pedestrian traffic would be to shift pedestrians from sidewalks east of the ballpark to the area to the north of the ballpark.

h. Project Impacts on Bicycle Facilities. The stadium event schedule is projected to include mostly night games, hence the percentage of attendees arriving by bicycle is estimated to be very low. Nevertheless, bicycle racks should be provided. The proposed changes to Bird Avenue may incorporate bicycle lanes, but otherwise there is estimated to be no impact on bicycle facilities from the project.

i. Project Impacts on Parking Facilities. The proposed baseball stadium would include limited on-site parking (approximately 150 spaces) for players and staff. The project also includes the construction of a new parking garage on an adjacent parcel (south of Park Avenue) with up to 1,200 spaces. Aside from these new parking facilities, stadium patrons are expected to utilize existing parking garages and lots in the Diridon/Arena area and parking facilities within the Downtown Core Area east of SR 87. The adequacy of the proposed and existing parking facilities was evaluated for a sell-out weekday evening baseball game. The analysis assumes no concurrent event at the HP Pavilion.

The parking demand generated by the proposed baseball stadium was estimated based on a survey of San Jose Sharks fans attending a weekday evening hockey game at the HP Pavilion. Table V.C-12 presents a detailed summary of how the projections were derived. Based on these travel characteristics, the total parking demand generated by the proposed stadium is estimated to be 17,258 spaces.

Table V.C-12: Project Parking Generation Estimates

Mode Share	Percent	Person
Public Transit	4.5	1,974
Charter Bus, Taxi, and Limo	1.1	482
Walk/Bicycle	3.3	1,447
Drop-off/Pick-up	0.6	263
Auto	90.5	39,693
Average Vehicle Occupancy		2.3 persons/vehicle
Ballpark Vehicle Parking Demand		17,258
Projected Ballpark Attendance[1]		43,860

[a] Total projected Attendance for sold out weekday night game, including fans, team personnel, concessions, emplyees, and media personel

Source: Hexagon Transportation Consultants.

Subtracting the number of parking spaces at the proposed stadium (150) and at the proposed new stadium parking garage (1,200) from the total stadium parking demand (17,258 spaces) yields an estimated off-site parking demand of 15,908 spaces. A parking management plan will be implemented to prevent stadium patrons from seeking parking in the residential area west of the site.

It should be noted that some of the surface parking lots east of the project site are approved for redevelopment with other uses. This could increase or decrease the availability of parking, although in most cases, the parking is likely to increase. For example, the San Jose Water Company lots now provide 800 spaces, and the approved office and residential complex would provide 3,000 spaces.

Within ¾ miles from the stadium, a total supply of 19,722 parking spaces currently exist to the north and east of the project site. Assuming these spaces normally are 25 percent occupied in the evening without an event at the HP Pavilion, there are an estimated 14,791 available spaces for the stadium.

(1) Single-Event Scenario. Existing parking facilities in the Diridon/Arena area as well as garages and lots in the Downtown Core Area east of SR 87 would be short 1,117 spaces, or 7 percent of off-site demand. These patrons would have to seek parking outside of the ¾-mile distance from the ballpark. There are an additional 10,009 spaces in this area. Under such circumstances it might be desirable to operate a shuttle bus from outlying parking areas to the ballpark. Alternatively, the City may wish to encourage transit usage and carpooling as a way to reduce the number of cars brought downtown.

(2) Simulataneous-Events Scenario. A concurrent HP Pavilion event would reduce the amount of parking available to the patrons of the stadium. The HP Pavilion has an agreement with the City of San Jose to make available a sufficient number of parking spaces near the arena. In order to maintain this availability, it would be necessary to monitor the parking lots and garages nearest the HP Pavilion so that no stadium attendees would park there. This could be accomplished by supplying special parking passes with HP Pavilion tickets or by having patrons show tickets to parking operators in order to access the lots and garages made availablefor the HP Pavilion under the agreement.

The HP Pavilion agreement with the City of San Jose requires that there be 6,650 spaces (6,350 patron and 300 employee) available to the arena within ½-mile, and that 3,475 of these spaces be within ⅓-mile. The parking lots nearest the HP Pavilion are the HP Pavilion main lot, HP Pavilion Lot D, Cahill Lots 1-4, SJ Water Company lots, and the Akatiff & Milligan lots. These all are within ⅓-mile and have a combined capacity of 3,791 spaces (see Table V.C-6). To satisfy the agreement, another 2,859 spaces would need to be available. These spaces could be found in the following lots and garages: Market/San Pedro garage (1,392 spaces), Comerica garage (736 spaces), and Park Center Plaza III garage (1,320 spaces).

The reduction of parking available to the ballpark in the simultaneous-events scenario will mean the utilization of space in lots and garages farther than ¾-mile from the ballpark. Counting parking facilities outside this radius, but still within downtown San Jose, adds another 10,009 spaces to the inventory (see Table V.C-6). The combined parking demand of the HP Pavilion and the ballpark would be about 24,000 spaces, assuming no shift in travel mode or vehicle occupancy. This demand essentially could be met within downtown San Jose, where there are about 23,300 spaces available (75 percent of 31,081). The 700-space calculated shortfall would be a very small proportion of the total demand and, in response to this demand, it is expected that transit usage and car-pooling would increase slightly, and other private lots would be pressed into service. In that event, some ballpark patrons would experience walk times of 20 to 30 minutes. Under such circumstances, it might be desirable to operate a shuttle bus from outlying parking areas to the ballpark. Alternatively, the City might wish to encourage transit usage and carpooling as a way to reduce the number of cars brought downtown.

It is not the intent of the City to rely on any on-street parking, especially west of Bird Avenue, to serve the stadium. To prevent parking in the neighborhoods, the City may need to implement time limit or permit parking. (Figure V.C-11 shows the numerous existing zones where permit parking has been instituted.) Nevertheless, patrons new to the area might think that there is parking available west of Bird Avenue and drive through the neighborhoods looking for parking. Therefore, initially the City

could place temporary barricades at neighborhood street entrances and signs directing vehicles to parking garages to control parking and traffic in this area. Once stadium patrons learn that parking is not available west of Bird Avenue, it may be possible to dispense with the barricades. However, it still will be necessary to continue parking enforcement to ensure that the permits and time limits are being observed. A detailed Traffic and Parking Management Plan (TPMP) should be prepared that describes initial short-term traffic controls as well as the long term traffic management. This is the same procedure that was followed for the opening of the Arena. The Arena TPMP has been refined over the years, and now Arena events do not result in substantial, recurring traffic or parking impacts.

j. Project Impacts on Pedestrian Facilities. A pedestrian analysis was undertaken to determine whether the existing sidewalks and street crossings would be adequate to serve the levels of pedestrian activity expected during arrival at and departure from sold-out events at the stadium. Pedestrian routes to the stadium were analyzed for the peak hour, which was determined to be the hour before the start of the game (based on counts at the HP Pavilion). Based on the survey of HP Pavilion patrons, it was estimated that 91 percent of stadium patrons would arrive by car, with the majority parking in the existing lots and garages in the greater downtown area. Because the number of pedestrian trips and the routes would be determined by the locations of parking areas, this pedestrian analysis focuses on the pedestrian flows between the parking areas and the proposed stadium. The pedestrian analysis was undertaken both with and without a simultaneous HP Pavilion event. Although existing and planned multiuse pedestrian and bike trails would be located very near the stadium, it is not expected that many ballpark patrons would use those facilities.

To identify the routes of park-and-walk trips, the downtown parking facilities and their capacities were identified. The number of cars entering each lot or garage was estimated. Without a simultaneous HP Pavilion event, it was assumed that all the parking lots west of SR 87 could be used for the stadium. With a simultaneous event, it was assumed that all parking west of SR 87 would be taken by HP Pavilion patrons (except for the stadium garage on Park Avenue). Thus, ballpark patrons would need to park in the lots and garages east of SR 87. Based on the HP Pavilion survey, the vehicle occupancy was assumed to average 2.3 persons per car. From that information the number of stadium attendees for each parking garage was derived. Then the pedestrian routes were determined. It was assumed that the pedestrians would take the shortest route to the stadium, and that they would walk directly from the garage to the stadium. The resulting assignment of pedestrian trips at critical locations is shown in Figures V.C-12 and V.C-13. The pedestrian routes for an event at the stadium can be described as follows:

1. The stadium plans to develop a parking structure of about 1,200 spaces on Bird Avenue at Park Avenue. This would generate approximately 1,555 peak hour pedestrian trips between the new garage and the stadium. These pedestrians would utilize the proposed pedestrian bridge crossing Park Avenue. These pedestrians are not shown on Figures V.C-12 and V.C.-13, as they would not impact traffic on the surface streets.

2. There are five parking areas west of SR 87 and east of the project site: the HP Pavilion main lot, Cahill lots, HP Pavilion lot D, SJ Water Company lot, and Akatiff and Milligan lots. If there is no event at the HP Pavilion, these lots could be used for stadium parking. These lots have a combined total of nearly 3,800 parking spaces and would generate approximately 5,110 peak hour pedestrian trips. The 1,000 pedestrians from the Akatiff and Milligan lots were assumed to walk down Autumn Street; the 1,160 pedestrians from the Water Company lots

Figure V.C-11: Existing Permit Parking Zones in Vicinity of Project Site

8½ x 11, black & white

Figure V.C-12: Estimated Pedestrian Volumes – Single-Event Scenario

8.5 x 11 black + white

Figure V.C-13: Estimated Pedestrian Volumes – Simultaneous-Events Scenario

8.5 x 11 black + white

were assigned to W. San Fernando Street. The 2,950 pedestrians from the two HP Pavilion lots and the Cahill lots were assigned to Cahill, Montgomery and Autumn Streets. If there are simultaneous events, then all of the parking west of SR 87 will be used for the HP Pavilion patrons. Therefore, for the simultaneous-events scenario the 5,110 peak hour pedestrian trips normally generated from the parking garages west of SR 87 would be coming from parking garages east of SR 87.

The bulk of the peak hour pedestrian trips, approximately 16,480, would be walking from parking garages and lots east of SR 87 during a single event at the stadium. Under the simultaneous-events scenario, there would be 21,590 peak hour pedestrian trips from east of SR 87. There are four main roads that pedestrians could use to walk from east of SR 87 to the stadium: W. Santa Clara Street, W. San Fernando Street, Park Street, and San Carlos Street. The majority of the garages and lots are near W. San Fernando Street and Park Avenue. These two streets also lead directly to the stadium, so it was assumed that the majority of the pedestrians would use those two streets.

To determine the impacts of these pedestrian trips, a pedestrian flow rate of 14.94 pedestrians per minute per foot of sidewalk width was assumed. The space per pedestrian was assumed to be approximately 15 square feet. These numbers were selected from the *2000 Highway Capacity Manual* and represent the uppermost limit of LOS D for pedestrian facilities. Using these assumptions, a 5-foot-wide sidewalk would have a capacity of approximately 4,480 pedestrians per hour.

Table V.C-13: Sidewalk Pedestrian Flows

Street	Peak Pedestrian Volume	Approx. Sidewalk Width (Ft)*	Sidewalk Capacity at LOS D* (ped/hr)	Widening Required?
W. Santa Clara St.	2,056	18	16,134	No
Cahill St.	2,324	24	21,512	No
Montgomery St.	625	16	14,341	No
Autumn St.	3,056	10	8,963	No
W. San Fernando St., west of Delmas St.	7,342	10	8,963	No
W. San Fernando St., east of Delmas St.	6,183	10	8,963	No
Park Ave., west of Josefa St.	8,238	14	12,549	No
Park Ave., east of Josefa St.	6,182	10	8,963	No
San Carlos St.	2,056	15	13,445	No

* Total existing sidewalk width on both sides of the street.

Source: Hexagon Transportation Consultants, 2005.

The results of the pedestrian analysis for sidewalks are presented in Table V.C-13, which shows the peak hourly pedestrian flow for a given street, the total width of sidewalk on both sides of the street, and the capacity of the sidewalks on both sides of the street at LOS D. The sidewalk widths by street are shown on Figure V.C-14. Sidewalks on streets east of SR 87 or north of Santa Clara Street are not expected to experience any pedestrian impacts because either the sidewalks are wider, or the stadium pedestrians will be more dispersed, or both.

The results of the sidewalk analysis showed that the sidewalk width on most streets is adequate to handle the anticipated pedestrian flows. The exception is on Park Avenue between Autumn Street and Josefa Street. The south side of the street does not have a sidewalk. A sidewalk of at least six feet of unobstructed width should be built on this section of Park Avenue in order to accommodate the expected pedestrian volume. None of the other sidewalks would need to be widened due to the increased pedestrian flows to or from the ballpark. While the sidewalk widths are adequate, it should be noted that the pedestrian flows could be fairly continuous in the one hour before a game and the one hour after a game. Therefore, vehicles could have difficulty accessing cross-streets and driveways along Park Avenue and San Fernando Street between Autumn Street and SR 87.

Figure V.C-14: Existing Sidewalk Widths

8½ x 11, black & white

The increased pedestrian flows from the proposed stadium also would affect operations at nearby intersections. To achieve the mitigated intersection levels of service described previously in this report, a Traffic and Parking Management Plan would be developed and changes would be required to: (1) pedestrian phase green times, (2) crosswalk widths, and (3) the size of pedestrian queuing area at corners. There are four intersections where pedestrian improvements are recommended to accommodate the increased pedestrian demand. These are described below.

- **Autumn Street and Park Avenue.** Total pedestrian crossing times (pedestrian walk time plus pedestrian clearance time) should be extended to between 41 seconds and 73 seconds, depending on the approach. All four crosswalks should to be widened to 20 feet. The northeast and northwest corners should provide approximately 3,600 square feet and 4,800 square feet of sidewalk space, respectively, to accommodate pedestrians waiting to cross the street. The southeast and southwest corners should provide approximately 2,400 square feet of sidewalk space to accommodate pedestrians waiting to cross the street. The recommended pedestrian queuing space on all corners could be provided by either removing the existing "pork-chop" islands for right turns or incorporating the space into the stadium and parking garage sites.

  The above improvements would be sufficient for the single ballpark event. For simultaneous events with the HP Pavilion, pedestrian flows would be higher, and further changes would be necessary. To increase the length of pedestrian greentime during simultaneous events, all left turns should be prohibited and left turn signal phases eliminated. This would require coning-off the left turn pockets and police control of the signal operations.

- **Autumn Street and W. San Fernando Street.** Total pedestrian crossing times should be extended to between 21 seconds and 49 seconds, depending on the approach. All four crosswalks should be widened to 20 feet. The northeast, northwest, and southeast corners should provide approximately 2,600 square feet of sidewalk space to accommodate pedestrians waiting to cross the street. The southwest corner should provide approximately 5,200 square feet of sidewalk space to accommodate pedestrians waiting to cross the street. On the southwest corner, the recommended pedestrian queuing space can be provided within the stadium site. Removing the "pork-chop" island on the northeast corner would yield the recommended pedestrian space. On the southeast and northwest corners, the recommended pedestrian space could be gained by modifying the west and south intersection legs in conjunction with the stadium design. This may require additional land from the stadium site. These improvements would be sufficient for both the single stadium event and simultaneous events.

- **Delmas Street and Park Avenue.** Total pedestrian crossing times should be extended to between 26 seconds and 46 seconds, depending on the approach. The crosswalks on the north and south legs should to be widened to 20 feet. All four corners should provide approximately 1,600 square feet of sidewalk space to accommodate pedestrians waiting to cross the street. On the northeast and southeast corners, there is ample open space to accommodate the estimated pedestrian queuing area. On the northwest and southwest corners, providing the recommended pedestrian space would require the removal of on-street parking and widening of the sidewalk areas.

  The above improvements would be sufficient for the single ballpark event. For simultaneous events with the HP Pavilion, pedestrian flows would be higher, and further changes would be necessary. To increase the length of pedestrian greentime during simultaneous events, left turns from westbound Park to southbound Delmas should be prohibited and that left turn signal phase eliminated. This would require coning-off the left turn pocket and police control of the signal operations.

- **Delmas Street and W. San Fernando Street.** Total pedestrian crossing times should be extended to between 16 seconds and 54 seconds, depending on the approach. Wider crosswalks are not required. The existing sidewalks provide adequate space to accommodate pedestrians waiting to cross the street (approximately 1,600 square feet on all four corners). These improvements would be sufficient for both the single stadium event and simultaneous events.

It should be noted that estimation of pedestrian trips to/from the parking areas east of SR 87 has utilized worst-case assumptions. As previously described, the mode split data used to determine the number of project vehicle, transit, and pedestrian trips were derived from patron surveys at the HP Pavilion. However, the HP Pavilion is considerably smaller than the proposed stadium. The proposed stadium would require more available parking spaces and, correspondingly, would draw from a larger number of parking garages within the downtown area. While there is sufficient parking available in the downtown area to accommodate the 91 percent drive mode share assumed for the proposed stadium, the resulting walking distances between the parking areas and the stadium would increase considerably from those of the HP Pavilion survey. As walking distances increase, it is possible that some stadium patrons would find it quicker to ride transit. For this reason, it is anticipated that the mode share for transit associated with the proposed stadium might turn out to be greater than that observed in the HP Pavilion survey. The general effect of an increase in transit mode share would be to: (1) reduce the number of stadium vehicle trips in the downtown area; (2) reduce the numner of patrons walking from the east and crossing Autumn Street; and (3) increase the number of pedestrian trips between the Diridon CalTrain/LRT station and the stadium. The latter could be accommodated on the sidewalks of Cahill Street, Montgomery Street, and Autumn Street, which have the capacity to handle greater than 30,000 additional pedestrian trips per hour.

Bird Avenue is used by school children who live north of I-280 to access Gardner Elementary School, which is located south of I-280. The ballpark would add some traffic to Bird Avenue during school hours for events that occur during the day. The stadium project includes improvements to Bird Avenue that would benefit pedestrian safety on Bird Avenue. These include eliminating free right turns at the intersections, tightening corner radii to decrease vehicle speeds and decrease pedestrian crossing distances, and upgrading the sidewalks and landscaping. Also, there is an option to add bike lanes to Bird Avenue.

k. Analysis on Neighborhood Streets. Neighborhood streets near the future stadium area have been analyzed for potential traffic or parking impacts. Most stadium patrons will use the freeway system to access downtown, rather than surface streets, because they will be coming from relatively long distances. The freeway exits generally lead to major arterials rather than to neighborhood streets. Nevertheless, some patrons living in nearby neighborhoods to the south or west would use city streets to get to the stadium. The two neighborhood streets that have potential for increased traffic are Auzerais Avenue and Park Avenue. The other surface streets near the future stadium, San Carlos Street, Bird Avenue and The Alameda, are major throughways and not considered neighborhood streets. The stadium would have the same effect on surrounding neighborhoods with or without a concurrent event at the HP Pavilion.

(1) Park AvenueAnalysis. Because the proposed new parking garage to be built along with the stadium would have an entrance on Park Avenue, a portion of the traffic entering the garage could be expected to use Park Avenue. The garage entrance on Park Avenue is planned to accommodate only right turns; therefore, it would be accessed by cars traveling eastbound. Park also would be used

by other stadium patrons traveling to other parking lots and garages in the greater downtown area. The estimated increase in traffic volume on this portion of Park Avenue is 300 vehicles before a game and 300 vehicles after a game, for a total daily traffic increase of 600 on game days (see Table IV.C-14). This represents about an eight percent increase in traffic. This is likely to represent people coming into the area on Meridian Avenue, Lincoln Avenue, West San Carlos Street, and Park Avenue. Some of these patrons would return home via West San Carlos Street because only right turns will be allowed out of the proposed Park Avenue parking garage.

Table V.C-14: Traffic Volumes on Neighborhood Streets

Street	Segment	Existing ADT	Added By Project
Park Avenue	West of Bird Avenue	7,100	600
	East of Bird Avenue	5,800	690
Auzerais Avenue	West of Bird Avenue	4,900	0
	East of Bird Avenue	3,700	100

Source: Hexagon Transportation Consultants, 2005.

The portion of Park Avenue east of Bird Avenue would be used by people exiting southbound SR 87 and driving to the proposed new parking garage, as well as people accessing the greater downtown area from neighborhoods to the south and west. It is estimated that about 345 cars would use this section of Park Avenue before a game, and the same number leaving at the end of a game.

(2) Auzerais Avenue. Auzerais Avenue west of Bird Avenue is not expected to have an increase in project traffic. This section of Auzerais Avenue does not provide access to any of the existing or planned parking facilities. It is possible that stadium patrons new to the area might think there is parking down Auzerais (or down other neighborhood streets), and they might drive down the street searching for it. To prevent this from happening, it is recommended that barricades or other forms of traffic control be implemented for the first few months of stadium operation.

There would be some stadium traffic using the section of Auzerais Avenue east of Bird Avenue. Vehicles that exit to Woz Way from northbound SR 87 could use Auzerais Avenue to get to Bird Avenue and then to the parking garage, although this is not their only route option.

l. Bird Avenue/Autumn Street Design. A series of transportation-related changes are planned for the Bird Avenue/Autumn Street corridor, either as background improvements (something already planned without the stadium) or as part of the stadium project. The changes include the extension of Autumn Street to Coleman Avenue, the realignment of Autumn Street (and abandonment of Montgomery Street) along the eastern side of the stadium site, and transportation operations improvements on Bird Avenue between I-280 and Park Avenue. These improvements are described in detail in the transportation technical background report (Appendix C of the EIR).