

4.2

TRANSPORTATION AND TRANSIT



4.2.1 INTRODUCTION

This section discusses existing and future transportation conditions in the study area, and quantifies the expected long-term transportation impacts of the Without Project and BART Extension Project. Existing and projected future transit services, forecasts of transit patronage, and impacts on travel patterns and the transportation environment are described, as well as existing and projected vehicular traffic, circulation, parking, and non-motorized conditions in the study area. Traffic operations during the peak hour are evaluated, with emphasis on intersection levels of service (LOS), and measures are identified for mitigating significant impacts on the roadway network. Short-term construction-phase impacts are discussed in Section 4.18, *Construction*.

Future transit patronage and vehicular traffic volumes were developed using an enhanced version of the Metropolitan Transportation Commission (MTC) regional model. Transportation modeling approaches, assumptions, baseline projects, and projections for existing conditions under the Without Project and BART Extension Project are described in the *Travel Demand Modeling Methodology Report*, *Travel Demand Forecasts Report*, and three traffic impact analysis reports addressing the station areas. The three

traffic impact reports are listed below and form the basis for much of the information in this section.

- ❑ Milpitas BART Stations Transportation Impact Analysis, Draft, Hexagon Transportation Consultants, Inc., September 20, 2006.
- ❑ San Jose BART Stations Transportation Impact Analysis, Draft, Hexagon Transportation Consultants, Inc., August 30, 2006.
- ❑ Santa Clara BART Stations Transportation Impact Analysis, Draft, Hexagon Transportation Consultants, Inc., August 24, 2006.

The analysis for the SEIR underwent a major change in that the forecast year is 2030, rather than 2025 as used in the FEIR. As a result of the new forecast year, new base year traffic counts, new modeling, updated demographic data with ABAG projections and other assumptions, this section has been updated since the FEIR. The regulatory setting did not change from the FEIR.

4.2.2 TRANSIT

4.2.2.1 Existing Conditions

RAIL AND BUS SERVICES

VTA currently operates 52 Local bus routes, 5 Limited Stop bus routes, 11 Express bus routes, 1 Rapid bus route, and 3 Light Rail routes, as well as 2 inter-county bus lines in its approximately 326-square-mile service area. Total fleet size to operate these fixed-route transit services is 525 buses and 100 light rail vehicles, including spare vehicles.

VTA's LRT service in Silicon Valley includes I-880/Milpitas LRT station on the Tasman West LRT line located on Tasman Drive, west of I-880. The Capitol LRT line has been in operation since June 2004. The Capitol LRT line extends the Guadalupe line south to Alum Rock Avenue along Capitol Avenue. In downtown San Jose, the Guadalupe line continues directly through downtown on 1st and 2nd streets, and provides a direct link between south San Jose, north San Jose, Milpitas, and east San Jose. Six LRT stations within the downtown area provide connections to many bus lines.



VTA opened its new Vasona light rail extension in October 2005. This line was connected to the Tasman West line and provides contiguous service between downtown Mountain View and downtown Campbell. Trains on the Winchester to Mountain View line operate

with the Santa Teresa to Alum Rock line on 1st Street between downtown San Jose and Tasman Drive.

VTA also provides LRT shuttle service for major Silicon Valley employment destinations and paratransit service for seniors and the disabled community. VTA is a member of the Peninsula Corridor Joint Powers Board, which operates Caltrain service between Santa Clara, San Mateo, and San Francisco counties; the ACE commuter rail service between San Joaquin, Alameda, and Santa Clara counties; and the Capitol Corridor Joint Powers Board, which operates intercity rail service from Placer to Santa Clara County.

Other transit operators in the Silicon Valley Rapid Transit Corridor study area include BART, AC Transit, Caltrain, ACE, Capitols, and Amtrak. BART's terminus in the study area is the Fremont BART Station. Bus service between Fremont and Milpitas is provided by AC Transit. The 217 bus line provides service from the Fremont BART Station to the Milpitas-Alder LRT Station via Mission Boulevard on a 30-minute headway. Caltrain operates a commuter rail service 7 days a week between San Jose and San Francisco with 15- to 30-minute headways during commute hours. During weekday commuting hours, Caltrain also serves the south county, including Gilroy, San Martin, and Morgan Hill. Caltrain provides shuttle service to businesses in the Silicon Valley and on the Peninsula. Potential expansion includes the extension of Caltrain service farther south to Pajaro, Castroville, and Salinas. The Diridon Caltrain Station, located near the Montgomery Street/Santa Clara Street intersection, provides service to the downtown area via connections with bus lines 63, 64, 65, 68, and 180, and the Downtown Area Shuttle (DASH). The ACE provides commuter rail service between the Central Valley and Diridon Station. The City of Santa Clara is also served by two ACE stations-the Great America ACE/Amtrak Station and Santa Clara Caltrain/ACE Station. Three trains are in operation during weekday commuting hours. ACE also provides an ACE/Amtrak bus line 3911 for late commuters. Shuttle service from the stations to employment centers are provided by various public transit agencies. The Capitol lines provide rail service between Sacramento and San Jose, with four daily round trips. The train serves the Diridon Station.

RAIL AND BUS PATRONAGE

Table 4.2-1 summarizes the weekday transit boardings of these agencies for 2000, which total over 700,000 riders per day. The table does not include boardings from outside the 9-county region.

4.2.2.2 Project Impacts and Mitigation Measures

2030 PROGRAMMED IMPROVEMENTS

New transit services and capital projects programmed for the Corridor in the Regional Transportation Plan (RTP) are listed below. The projects include

a BART Extension to Warm Springs, VTA LRT extensions and Bus Rapid Transit (BRT) lines, and commuter rail upgrades. Chapter 3.0, *Alternatives*, of the FEIR provided additional detail and service characteristics.

- ❑ Vasona LRT
- ❑ Tasman East/Capitol LRT
- ❑ Downtown/East Valley LRT (Capitol Expressway and Santa Clara/Alum Rock Projects)
- ❑ BRT – Line 22/Line 300
- ❑ BRT – Monterey Highway – Line 66/Line 68
- ❑ BRT – Stevens Creek Boulevard – Line 23

TABLE 4.2-1:

Fiscal Year 2006 Average Weekday Transit Boardings by Operators in the Corridor	
OPERATOR	2006 BOARDINGS
BART	323,000
ACE Entire System	
ACE	2,500
ACE Shuttles	690
SUBTOTAL	3,190
CAPITOLS	3,181
VTA LRT System	
Santa Teresa / Alum Rock LRT (includes Almaden LRTI Shuttle)	18,500
Winchester / Downtown Mountain View LRT	8,700
SUBTOTAL	27,200
VTA Bus System	
VTA Express ³	2,800
BRT/Limited	6,100
Local Bus	100,000
SUBTOTAL	108,900
VTA ENTIRE SYSTEM	136,100
Caltrain	30,000
AC Transit	215,000
TOTAL	710,471

Source: VTA, 2006

- ❑ Expansion of VTA bus fleet to 650 vehicles
- ❑ Caltrain commuter rail and service upgrades
- ❑ ACE commuter rail and service upgrades
- ❑ Capitols commuter and intercity rail service upgrades
- ❑ Norman Y. Mineta San Jose International Airport APM
- ❑ BART Extension from Fremont to Warm Springs (5.4 miles)
- ❑ AC Transit southern Alameda County bus service increases
- ❑ West Dublin BART Station
- ❑ Union City BART Intermodal Terminal
- ❑ Oakland International Airport APM

Travel demand forecasts, based on the 2030 transit network assumptions described above, have been developed for the Project. Forecasts include estimates of transit activity and trip-making in the Corridor. Table 4.2-2 summarizes study area transit projections for 2030 under the Without Project conditions. Transit trips on all transit operators in the study area are projected to grow approximately 50 percent between 2000 and 2030, increasing from 1.37 million in 2000 to 2.03 million in 2030. Transit trips between Alameda and Santa Clara counties are expected to increase by more than 400 percent over the same period, from about 9,300 per day to 38,700 per day. Systemwide BART trips are projected to increase from 335,600 to over 661,300.

New Linked Transit Trips

Table 4.2-3 compares the Year 2030 transit ridership forecasts for the Without Project and Project in terms of new linked transit trips. Linked transit trips exclude transfer boardings so that a transit trip that uses more than one transit line or mode is counted only once. As a result, new linked transit trips are trips that are diverted from the automobile. The Project would generate a higher number of new average weekday linked transit trips, 49,642 trips, in comparison to the Without Project conditions. This is a result of the Project serving a greater number of average weekday transit trips, 2.08 million, compared with the Without Project conditions serving about 2.03 million transit trips. New transit trips were calculated by comparing the projected total number of average weekday linked transit trips in 2030 with the Without Project conditions. The row labeled “Average Weekday Trips” represents total daily linked transit ridership for all the transit operators within the modeled area, including transit users coming over the Altamont Pass on either ACE or express buses.

Total Average Weekday Boardings

The projected change in BART system 2030 ridership has been forecasted. Table 4.2-4 presents the results and comparison to Without Project conditions. The BART Extension Project is projected to increase BART systemwide ridership by more than 98,000 average weekday boardings (14 percent).

TABLE 4.2-2:

Projected Average Weekday Transit Trips– Without Project Conditions			
TOTAL AVERAGE WEEKDAY TRIPS	2000	2030	% GROWTH
All Transit Operators in Area ¹	1,366,511 ³	2,025,905	48%
Between Alameda and Santa Clara Counties	9,300 ²	38,700	316%
BART Systemwide	335,600	661,316	97%
¹ Includes total daily transit ridership for the all transit operators within the modeled area, including transit users coming over the Altamont Pass on either or express buses. ² Estimated from model calibration data by VTA, 2005. ³ Estimated from No Project Model Forecast by Hexagon, Winter 2006.			
Source: Travel Demand Forecasts, Hexagon Transportation Consultants, Inc., Fall 2006			

TABLE 4.2-3:

Total Average Weekday and New Linked Transit Trips in 2030¹		
PERFORMANCE MEASURE	WITHOUT PROJECT	BART EXTENSION PROJECT
Total Average Weekday Trips ²	2,025,905	2,075,547
New Linked Transit Trips Compared to Without BART Extension	N/A ³	49,642
¹ <i>Linked transit trips exclude transfer boardings. New linked trips are diverted almost entirely from auto trips.</i> ² <i>Includes total daily transit ridership for the all transit operators within the modeled area, including transit users coming over the Altamont Pass on either ACE or express buses.</i> ³ <i>N/A = Not Applicable</i>		
<i>Source: Travel Demand Forecasts, Hexagon Transportation Consultants, Inc., Fall 2006</i>		

TABLE 4.2-4:

Total Average Weekday BART System Boardings in 2030		
PERFORMANCE MEASURE	WITHOUT PROJECT	BART EXTENSION PROJECT
Total Average Weekday Boardings	698,111	794,894
Change from Without Project ¹	N/A ²	96,783
¹ <i>Change represents new BART system boardings.</i> ² <i>N/A = Not Applicable</i>		
<i>Source: Travel Demand Forecasts, Hexagon Transportation Consultants, Inc., Fall 2006</i>		

Average Weekday Transit Trips

As shown in Table 4.2-5, the Project with the Calaveras Station is projected to serve 103,661 average daily transit trips in 2030. Approximately 65,100 (63 percent) of these projected trips would be between other counties and Santa Clara County. The Project is also projected to serve 38,608 average daily weekday trips made completely within Santa Clara County. An estimated 96,783 (93 percent) of the Project’s

103,661 trips would be new trips on BART as a result of its service to and within Santa Clara County. The remaining 6,878 trips (7 percent) were projected to ride BART in the absence of an extension, but are now projected to be riding BART into Santa Clara County. However, the Project ridership within Santa Clara County also contributes to a projected decrease of 2,503 in VTA LRT ridership (3 percent).

TABLE 4.2-5:

Total Average Weekday Transit Trips Served by BART Extension Project in 2030		
LOCATION	NUMBER OF TRIPS	PERCENT
Between Other Counties and Santa Clara County	65,053	63%
Within Santa Clara County	30,608	37%
Total Average Weekday Trips on BART Extension Project	103,661	100%
<i>Source: Travel Demand Forecasts, Hexagon Transportation Consultants, Inc., Fall 2006</i>		

Table 4.2-6 was developed from examining the projected change in transit ridership for the set of transit services most relevant to the study area (e.g., between Santa Clara County and southern Alameda County). The transit services used for this

comparison include the “Valley” express buses, VTA express buses, VTA Light Rail, ACE, and BART. Table 4.2-6 presents the results by showing comparisons to Without Project ridership forecasts.

TABLE 4.2-6:

Total Average Weekday Transit Crossing Alameda-Santa Clara County Line in 2030		
PERFORMANCE MEASURE	WITHOUT BART EXTENSION PROJECT	BART EXTENSION PROJECT
Total Weekday Riders	42,600	69,400
Change from Without BART Extension	N/A ¹	26,800
¹ N/A = Not Applicable		

Source: Travel Demand Forecasts, Hexagon Transportation Consultants, Inc., Fall 2006

The BART Extension Project does compete, in a sense, with some other transit services. Examples include ACE, the Capitols, and to a lesser extent Caltrain. The Project is projected to reduce ridership by about 25 percent for total route ridership on all three of these existing rail services combined.

Projected Ridership at Stations

The BART Extension Project would have six stations, plus one future station at the following locations. Chapter 3.0, *BART Extension Project Description*, describes the stations in more detail.

- ❑ South Calaveras (Future) – at Calaveras Boulevard (SR 237) and the rail ROW
- ❑ Montague/Capitol – at the rail ROW between Montague Expressway and Capitol Avenue
- ❑ Berryessa – at Berryessa Road and the rail ROW
- ❑ Alum Rock – at 28th Street between East Julian and East Santa Clara streets
- ❑ Downtown – at West Santa Clara Street between 1st Street and San Pedro Street
- ❑ Diridon/Arena – south of and parallel to West Santa Clara Street between Autumn and White Street and Diridon rail yard
- ❑ Santa Clara – at Benton Street/Brokaw Road between El Camino Real and Coleman Avenue



A comparison of the 2030 FEIR and SEIR riders by stations is provided in Table 4.2-7. As seen from the table, providing the one Downtown San Jose Station versus the two, the Civic Center/SJSU and Market Street stations, results in slightly lower total number of riders in the downtown area.

Table 4.2-8 shows the number of projected average weekday boardings and alightings at each

planned station along the Project, including home-based work and non-work trips. Therefore, one rider could result in both a boarding and alighting at Project stations. The three highest-volume stations have more than 27,000 average weekday projected boardings and alightings each. These stations offer the best mode transfer opportunities to bus, light rail, and commuter rail services.

TABLE 4.2-7:

Comparison of 2025 FEIR and 2030 SEIR Boardings by Station			
STATION NAME	FEIR 7 STATIONS	SEIR	
		6 STATIONS	6 STATIONS + CALAVERAS
South Calaveras	0	0	4,293
Montague/Capitol	19,245	31,010	27,757
Berryessa	6,537	7,932	7,972
Alum Rock	9,115	10,927	10,598
Civic Center/SJSU	6,236		
Market	17,866		
Downtown		23,474	22,749
Diridon/Arena	9,667	11,236	10,760
Santa Clara	14,919	20,066	19,532
TOTAL	83,585	104,645	103,661

Source: Connetics 2006

TABLE 4.2-8:

BART Extension Project Average Weekday Boardings and Alightings in 2030			
PROJECT STATIONS	HOME-BASED WORK	NON-WORK	TOTAL
South Calaveras	4,633	1,292	5,925
Montague	26,636	8,069	34,705
Berryessa	8,834	3,640	12,474
Alum Rock	12,374	4,125	16,499
Downtown	21,401	9,102	30,503
Diridon/Arena	9,164	5,613	14,777
Santa Clara	17,814	9,571	27,385
TOTAL	100,856	41,412	142,268

Source: Travel Demand Forecasts, Hexagon Transportation Consultants, Inc., Fall 2006

TABLE 4.2-9:

Mode of Access at BART Extension Project Stations									
STATION	WALK/ BIKE	BUS	LRT	APM¹	COMMUTER RAIL²	AUTO			TOTAL
						KNR³	PNR⁴	SUBTOTAL	
South Calaveras	2%	9%	—	—	—	13%	76%	89%	100%
Montague/Capitol	16%	29%	10%	—	—	7%	38%	45%	100%
Berryessa	11%	22%	—	—	—	10%	57%	67%	100%
Alum Rock	4%	13%	4%	—	—	13%	66%	79%	100%
Downtown	35%	45%	21%	—	—	—	—	—	100%
Diridon/Arena	13%	7%	9%	—	24%	7%	40%	46%	100%
Santa Clara	1%	18%	—	8%	18%	9%	46%	56%	100%
TOTAL	10%	19%	5%	1%	6%	9%	50%	59%	100%

¹ APM = Automated People Mover.
² Commuter Rail = Caltrain, Ace, and Capitols.
³ Kiss-and-Ride.
⁴ Park-and-Ride

Source: Hexagon Transportation Consultants, Inc., and VTA, Fall 2006

Mode of Access at Stations

Table 4.2-9 presents projected mode of access at the Project stations for the average weekday ridership. Transit modes would account for 31 percent of the access trips, while 10 percent of access trips would walk or use bicycles. The high use of non-auto modes is due to the convenience of transit connections to BART and the proximity of jobs and housing to Project stations in the downtown areas served by the proposed extension.

Drive access is projected to make up 59 percent of all BART access trips. At each of the stations with drive access, park-and-ride lots and kiss-and-ride drop-off areas will be provided for passengers accessing the stations by auto vehicles. Section 4.2.4.2 discusses the park-and-ride demand at future BART extension stations, while Chapter 5, *BART Core System Parking Analysis*, discusses BART systemwide parking.

Person-Hours Saved

Travel time savings to all persons in the Corridor reflect the effectiveness of the transportation services provided by the Project relative to the Without Project conditions. Transit travel time savings are achieved through minimizing waiting, riding, and transfer time for transit trips. Highway/roadway travel time savings are achieved through reductions in traffic congestion. Highway/roadway travel time savings are negative (i.e., travel times increase) as traffic congestion gets worse. Net changes in travel time in 2030 and the value of those savings in terms of the number of hours saved for all users of the transportation system (transit and highway/roadway) for the Project relative to the Without Project conditions is presented in Table 4.2-10. The BART Extension Project would generate travel time savings of almost 69,000 hours per day in comparison to the Without Project conditions, as shown in Table 4.2-10.

Travel Time between Selected Origin-Destination Pairs

One of the key objectives for the Project is to reduce transit travel times within the study area. Because travel time is a key factor in mode choice decisions (e.g., using an automobile versus public transit), traffic congestion and air pollution would be reduced if more people chose to use transit rather than their private automobile. More trips on transit also lead to faster highway travel because of reduced congestion. Table 4.2-11 presents a comparison of total door-to-door auto, shared-ride and transit travel times between seven selected origins and two selected destinations (14 origin-destination pairs) in the study area.

The Without Project conditions would rely on the transportation and transit improvements planned in the RTP and VTP 2030. These improvements would result in drive-alone travel times ranging from 17 to 144 minutes depending on trip origin-destination pairs. The trips to downtown San Jose or Great America were from locations as close as Berryessa to as far away as Pleasanton. Times for shared rides range between 17 and 101 minutes, and transit travel times range between 41 and 91 minutes for the same origin-destination pairs. Table 4.2-11 includes travel times for specific origin-destination pairs by travel mode.

TABLE 4.2-10:

Daily Travel Time Savings in 2030			
PERFORMANCE MEASURE	WITHOUT PROJECT	PROJECT	TRAVEL TIME SAVINGS
Daily Travel Time (Hours)	9,159,530	9,090,569	68,961

Source: Travel Demand Forecasts, Hexagon Transportation Consultants, Inc., Fall 2006

TABLE 4.2-11:

2030 AM Peak Door-to-Door Travel Time (Minutes) For Selected Origin-Destination Pairs							
FROM	TO	DRIVE-ALONE		SHARED-RIDE		TRANSIT	
		WITHOUT PROJECT	PROJECT	WITHOUT PROJECT	PROJECT	WITHOUT PROJECT	PROJECT
North Milpitas Boulevard	Downtown San Jose	23	22	22	22	55	22
Hostetter-Berryessa	Downtown San Jose	17	15	17	15	50	16
East San Jose	Downtown San Jose	22	21	20	20	41	41
South Fremont	Downtown San Jose	59	54	40	36	91	26
Newark	Downtown San Jose	67	63	47	44	59	40
Union City	Downtown San Jose	93	88	72	68	67	41
Pleasanton	Downtown San Jose	141	135	101	96	85	77

Source: Travel Demand Forecasts, Hexagon Transportation Consultants, Inc., Fall 2006

The BART Extension Project does provide a high-quality transit linkage between Alameda County and downtown San Jose, and Table 4.2-11 shows the associated travel time savings. The average transit travel time savings for all origin-destination pairs was projected to be about 26 minutes, with a maximum savings of 65 minutes. Notable transit travel time improvements are projected for transit trips to downtown San Jose from various points in Alameda County, including Fremont (65 minutes faster), Union City (26 minutes faster), and Newark (19 minutes faster). Travel times into the downtown are also projected to improve by 30 to 34 minutes from various points in northeastern Santa Clara County. Only the transit connection between Pleasanton in east Alameda County and downtown fails to show a material improvement in transit travel times; these origin-destination pairs are projected to be well served by express buses in the Without Project conditions.

Auto travel times also show improvement for many origin-destination pairs. Under the Project compared with the Without Project conditions, the average auto travel time saving for both drive-alone and shared-ride modes for all origin-destination pairs in Table 4.2-11 was projected to be about 3 minutes, with a maximum saving of 6 minutes. Also, see Section 4.2.6 for a summary of freeway level of service under the BART Extension Project.

4.2.2.3 Conclusion

Although the Project would increase transit use overall, it would also have some impacts to transit services, such as:

- ❑ Increased number of buses required to serve BART Extension Project stations.
- ❑ Reduced ridership on ACE, Capitols, Caltrain, and VTA LRT.

Examples of transit ridership competition with the BART Extension Project include the ACE and Capitols, and to a lesser extent Caltrain. The Project is projected to reduce ridership by about 25 percent for all three of these existing rail services combined. However, because the Project would cause a projected 1.6 percent increase in overall VTA transit trips, 13.3 percent increase in BART systemwide ridership, and

5.5 percent increase in total transit trips, these effects are not considered significant impacts to transit use. Because there are no significant impacts to transit use under the BART Extension Project, no transit mitigation measures are proposed.



4.2.3 PARKING

4.2.3.1 Existing Conditions

Much of the parking available around a -mile radius of each of the BART stations is in small private parking lots associated with businesses and offices. On-street parking is also available along the streets that surround the stations.

At the Montague/Capitol Station, the Great Mall and Heald College provide parking for their patrons and students, respectively. At the Berryessa Station, there are two large surface parking lots north-west and southwest of the site. These lots provide parking to patrons of the San Jose Flea Market, which is located immediately west of the station.

In downtown San Jose, there are several public parking facilities and several large, privately owned parking facilities with public access. At the Diridon/Arena Station, Caltrain provides parking for its patrons on three surface lots located immediately south and north of the existing station. In addition, a large parking lot is located immediately west of HP Pavilion for patrons of this facility.

At the Santa Clara Station, there are three surface parking lots: one to the north, one to the south, and one to the west that is jointly owned by the City of Santa Clara and VTA and designated for Caltrain patrons.

TABLE 4.2-12:

2030 Project Park-and-Ride Space Requirements				
STATION NAME	FEIR		SEIR	
	7 STATIONS	7 STATIONS + CALAVERAS	6 STATIONS	6 STATIONS + CALAVERAS
South Calaveras	0	990	0	1,253
Montague/Capitol ¹	1,628	1,023	2,030	1,198
Berryessa ²	1,500	1,500	4,126	3,945
Alum Rock ²	3,500	3,500	2,500	2,500
Diridon/Arena	2,262	2,262	1,313	1,319
Santa Clara	1,067	1,067	1,730	1,699
TOTAL	9,957	10,342	11,699	11,914
<p>¹ The Montague/Capitol station would only require 1,199 spaces if the South Calaveras Future Station is built. For the impact analysis, the worst case scenario was evaluated assuming approximately 2,000 parking spaces at the Montague BART station.</p> <p>² Include a shift of 1,950 spaces from Alum Rock to Berryessa Station.</p>				
<p>Source: Travel Demand Forecasts, Hexagon Transportation Consultants, Inc., Spring 2006</p>				

4.2.3.2 Project Impacts and Mitigation Measures

Table 4.2-12 summarizes base case park-and-ride space requirements for the six BART Extension Project stations planned with drive access. Adequate parking is important for BART to prevent spillover into neighborhoods surrounding the proposed stations. The park-and-ride demand was projected as part of the ridership modeling. The analysis considered any parking supply limitations at stations as well as how far passengers would be willing to drive to ride BART. When the parking demand is supply limited, it is said to be a constrained analysis. Otherwise, the parking demand analysis is called “unconstrained,” meaning that the parking supply is not a limiting factor. The Project traffic analysis discussed in Section 4.2.6 includes the vehicle trips generated by park-and-ride and kiss-and-ride trips at these five stations (excludes South Calaveras Future Station). For information on BART systemwide parking, please refer to Chapter 5, *BART Core System Parking Analysis*.

Without the South Calaveras Future Station, the park-and-ride demand for the Project is 11,699 spaces for the five stations with drive access. This includes 1,950 spaces shifted from the Alum Rock

Station to Berryessa Station to address community concerns about site impacts at the Alum Rock Station. The Berryessa and Alum Rock Stations would have approximately 2,185 and 4,450 spaces, respectively, without the shift. The Santa Clara Station would have 1,730 spaces, Montague/Capitol 2,030, and Diridon/Arena 1,313 spaces.

The South Calaveras Future Station would have 1,253 spaces. This future station would enable a reduction of approximately 830 spaces at the Montague/Capitol Station.

Caltrain and the BART Extension Project would have two intermodal stations: Diridon/Arena and Santa Clara, creating a potential for shared parking. The Diridon/Arena Station would also be adjacent to the HP Pavilion and the Santa Clara Station would provide connections to the SJLA, which may require special parking policies and arrangements. In addition, both LRT and BART patrons would have to be considered at the Montague/Capitol Station. VTA would continue to work with the cities and other transit agencies to implement appropriate parking policies and potential shared arrangements.

Design Change 42. Diridon/Arena Station and Alignment. The Diridon/Arena Station and Alignment includes a No Parking Option. If this option were selected, there would be an increase in parking demand at the Santa Clara Station of 815 parking spaces. This increased parking demand would require the 3-4 level Santa Clara Station parking garage to be increased in height to 5-6 levels.

The parking demand has been met with the station design plans. Therefore, no parking impacts were identified for the Project and no mitigation measures are required.



- ❑ Jacklin Road, between Milpitas Boulevard and Park Victoria Drive
- ❑ Yosemite Road, between Milpitas Boulevard and I-680
- ❑ Escuela Parkway, between Milpitas Boulevard and Jacklin Road
- ❑ Great Mall Parkway, between I-880 and Montague Expressway
- ❑ Main Street, between Calaveras Boulevard and Montague Expressway
- ❑ McCandless Drive, between Great Mall Parkway and Montague Expressway
- ❑ Milpitas Boulevard, between Jacklin Road and Yosemite Drive
- ❑ Capitol Avenue, between Trimble Road and Cropley Avenue

There are also three designated cross-county bicycle corridors in the station vicinity:

- ❑ The Alma Street/El Camino Real cross-county bicycle corridor runs along the extent of Montague Expressway.
- ❑ The SR 237/Tasman and Capitol Rail cross-county bicycle corridor runs along the extent of Great Mall Parkway/Capitol Avenue.
- ❑ The I-880/I-680/SR 17/Vasona Rail/Los Gatos Creek cross-county bicycle corridor runs along the extent of Main Street/Marylind Drive.

4.2.4 PEDESTRIANS AND BICYCLES

4.2.4.1 Existing Conditions

MONTAGUE/CAPITOL STATION AREA

Pedestrian facilities in the study area consist primarily of sidewalks, pedestrian push buttons, and signal heads at intersections. With a few exceptions, sidewalks are found along virtually all previously described local roadways in the study area and along the local residential streets and collectors near the sites.

There are county-designated bikeways within the vicinity of the station according to the VTA Santa Clara Valley Bikeways Map, October 2005. Within the vicinity of the station, bike lanes are provided on:

BERRYESSA STATION AREA

Pedestrian facilities in this study area and also the Alum Rock, Downtown San Jose and Diridon/Arena Stations consist primarily of sidewalks, pedestrian push buttons, and signal heads at intersections. With a few exceptions, sidewalks are found along virtually all previously described local roadways in the study area and along the local residential streets and collectors near the sites. There are several bicycle facilities in each of the station areas. Bicycle facilities include striped bike lanes on roadways; bike paths, which are separated from vehicle traffic and shared with pedestrians; and bicycle corridors, which are identified corridors between jurisdictions where it is desirable to implement bicycle facilities.

The Bay Ridge Trail: El Sombroso/Penitencia and Coyote Creek/Llagas Creek Trail travels along Coyote Creek in the vicinity of both the Berryessa and Alum Rock stations. This trail is for hiking, off-road bicycle, on-road bicycle, and equestrian use.

Within the vicinity of the Berryessa Station site, bike lanes are provided on:

- ❑ Berryessa Road, between 17th Street and Capitol Avenue
- ❑ Murphy Avenue, between I-880 and Capitol Avenue
- ❑ Old Bayshore Highway, between Brokaw Road and Taylor Street
- ❑ Old Oakland Road, between Murphy Avenue and US 101
- ❑ Lundy Avenue, between Murphy Avenue and Berryessa Road
- ❑ Flickinger Road, between Murphy Road and Berryessa Road
- ❑ Capitol Avenue, between Hostetter Road and Berryessa Road

A bike path located along Penitencia Creek extends from Mabury Road west of Jackson Avenue to east of White Road.

There are also four designated cross-county bicycle corridors in the station vicinity:

- ❑ *Cupertino to East San Jose* cross-county bicycle corridor runs along Hedding Street, Taylor Street, and Mabury Road to the East Foothills
- ❑ *North US 101/Caltrain* cross-county bicycle corridor runs along the extent of Hostetter Road
- ❑ *SR 237/Tasman and Capitol Rail* cross-county bicycle corridor runs along the extent of Capitol Avenue
- ❑ *I-880/I-680/SR 17/Vasona Rail/Los Gatos Creek* cross-county bicycle corridor runs along the extent of Coyote Creek

ALUM ROCK STATION AREA

The Five Wounds/Brookwood Terrace Trail passes through the Alum Rock Station. The trail extends from Lower Silver Creek along the railroad line to the Coyote Creek Trail and Kelley Park.

Within the vicinity of the Alum Rock Station site, bike lanes are provided on:

- ❑ San Antonio Road, between King Road and Jackson Avenue
- ❑ Jackson Avenue, between Alum Rock Avenue and San Antonio Street and McKee Road to Mabury Road
- ❑ Capitol Avenue, between Capitol Expressway and McKee Road
- ❑ 21st Street, between Santa Clara and William streets

DOWNTOWN SAN JOSE AND DIRIDON/ARENA STATION AREAS

The Guadalupe Trail passes in the vicinity of the Downtown and Diridon/Arena Stations along the Guadalupe River. This trail is for hiking and off-road bicycle use.

Within the vicinity of these sites, bike lanes are provided on:

- ❑ 17th Street, north of San Antonio Street
- ❑ 7th Street, south of San Carlos Street
- ❑ Park Avenue, between Naglee Avenue and Race Street

A bike path is located along the Guadalupe River between I-880 and Coleman Avenue and Santa Clara Street to Woz Way.

There are also two designated cross-county bicycle corridors in the station vicinity:

- ❑ *SR 87/Guadalupe LRT* cross-county bicycle corridor runs along the extent of SR 87
- ❑ *I-880/I-680/SR 17/Vasona Rail/Los Gatos Creek* cross-county bicycle corridor runs along San Carlos Street and Santa Clara Street



SANTA CLARA STATION AREA

Pedestrian facilities in the station area consist primarily of sidewalks along the streets in most residential and commercial areas. With the exception of the west side of Lafayette Street north of the station, sidewalks are found along virtually all previously described local roadways in the study area and along the local residential streets and collectors near the site.

There are county-designated bikeways within the vicinity of the station site. Bike lanes are provided on:

- ❑ Monroe Street, between Scott Boulevard and Newhall Street
- ❑ Market Street, between Saratoga Avenue and Jackson Street
- ❑ Bellomy Street, between Saratoga Avenue and Jackson Street

The I-280 to San Jose Airport cross-county bicycle corridor (included in the VTA's *Santa Clara Countywide Bicycle Plan-2020*) runs along Benton Street, through the proposed station site, and along Coleman Avenue.

4.2.4.2 Project Impacts and Mitigation Measures

PEDESTRIANS

Design Change 17. Montague/Capitol Station, Design Change 23. Berryessa Station, and Design Change 33. Alum Rock Station. Montague/Capitol, Berryessa, and Alum Rock Stations would not cause substantial overcrowding on public sidewalks, create hazardous conditions for pedestrians or eliminate pedestrian access to adjoining areas.

Design Change 40. Downtown San Jose Station. Analysis was conducted for the Downtown San Jose Station that concluded that the projected passenger demand would be adequately served by the existing capacity of sidewalks around the Downtown San Jose Station. Also, the Downtown San Jose Station would not create hazardous conditions for pedestrians or eliminate pedestrian access to adjoining areas.

Design Change 42. Diridon/Arena Station and Alignment. Analysis was conducted for the Diridon/Arena Station that concluded that the projected passenger demand would be adequately served by the existing capacity of sidewalks around the Diridon/Arena Station and the HP Pavilion. In addition, the Project proposes to construct a pedestrian over-crossing over Santa Clara Street to connect the Diridon/Arena Station parking garage north of Santa Clara Street to the south side of West Santa Clara Street. This pedestrian over-crossing would facilitate pedestrian traffic between the Diridon/Arena Station and parking structure.

Design Change 52. Santa Clara Station. The passenger demand at Santa Clara Station would not cause substantial overcrowding on public sidewalks. At the Santa Clara Station, the Project proposes to construct a pedestrian over-crossing over existing passenger and freight tracks between the Santa Clara Caltrain Station and the Santa Clara BART Station, parking garage and bus transit center. No east-west pedestrian connection currently exists. This pedestrian over-crossing would facilitate pedestrian traffic

between the Santa Clara Caltrain Station/Bus Transit Center and Santa Clara Bart Station.

The Project would have a less-than-significant impact on pedestrians resulting from hazardous pedestrian conditions and sidewalk overcrowding. The Project's pedestrian over-crossings at the Diridon/Arena and Santa Clara stations would also have a beneficial impact for non-BART riders who desire to cross at these locations since these over-crossings would be available to the general public.

BICYCLES

Bike Lanes

The BART Extension Project would not impact existing bike lanes within the cities of Fremont, Milpitas, San Jose, and Santa Clara. In addition, to improve bicycle connectivity through the BART station areas, VTA would construct bike lanes along existing or new streets within the station area of four stations. At Montague/Capitol Station, new bike lanes would be provided on both sides of the proposed South Milpitas Boulevard, which would connect Montague Expressway to the north, through the station area, to Capitol Avenue to the southwest. At Berryessa Station, new bike lanes would be provided on both sides of the proposed street, which runs north to south connecting Berryessa Road to the north with Mabury Road to the south through the station area. New bike lanes would be installed along both sides of 28th Street at Alum Rock Station. At Santa Clara Station, VTA would install bike lanes along both sides of the portion of Brokaw Road between Coleman Avenue and the terminus of Brokaw Road at the Caltrain Tracks. Refer to Appendix D for the BART Extension Project Station Design Plans for further details.

Bicycle Parking

BART and VTA transit station design guidelines require bicycle-parking facilities. The two sets of guidelines are different; therefore, for this study, both sets of guidelines were used to estimate the number of bicycle parking spaces that would be initially provided at each station. The more stringent (i.e., higher) value for each station is recommended for preliminary station design purposes. The actual

number of bicycle parking spaces to be provided will be determined by the station design team based on these initial recommendations, but would also consider other factors such as available space within the station areas. The VTA bicycle parking design guidelines suggest that the initial supply of parking should be equal to 2 percent of the daily passenger boardings at each transit station, and then usage should be monitored and the amount of bicycle parking adjusted based on observed demand.

The Project travel forecasts provide a very detailed projection of passenger boardings by mode of access to each planned BART station. The travel demand model projects the number of passengers who will arrive at the planned BART stations without using a motorized vehicle (auto, bus, or LRT). The number of bicycle parking spaces required by the VTA design guidelines, was derived by applying the 2-percent factor to the non-motorized vehicle passenger boardings.

The BART station design criteria simply specify that a minimum of 20 short-term rack spaces and 30 long-term bike lockers should be provided at each station. However, the actual supply of bicycle parking facilities would be adjusted in accordance with observed demand.

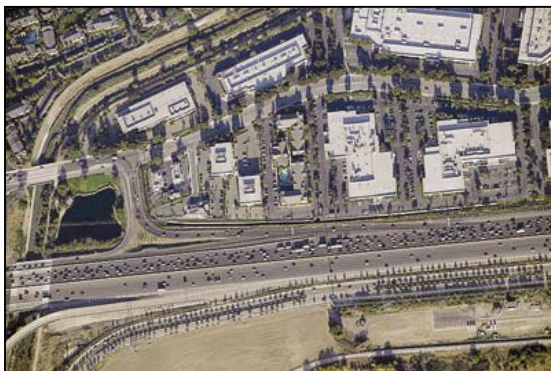
Using the more stringent of the VTA and BART bicycle parking design guidelines yields a recommended total of approximately 413 bicycle parking spaces. Approximately two-thirds (258) would be long-term bicycle storage lockers, and about 155 would be short-term bicycle storage racks. Table 4.2-13 shows the recommended number of bicycle parking spaces by type for each station, and references whether the VTA or the BART design guidelines produced the recommended number of spaces. The VTA guidelines yielded the higher number of spaces for the Downtown San Jose station that had relatively high volumes of passengers by non-motorized means, and the BART design criteria yielded the higher number of spaces for the stations with the relatively lower volume of non-motorized passenger arrivals.

There are no significant adverse impacts to pedestrians or bicycles from the BART Extension Project. Therefore, no mitigation measures are required.

TABLE 4.2-13:

Recommended Bicycle Parking Facilities				
PLANNED BART STATION LOCATIONS	SHORT-TERM RACKS	LONG-TERM LOCKERS	TOTAL SPACES	AGENCY CRITERIA
South Calaveras Future	20	30	50	BART
Montague/Capitol	20	30	50	BART
Berryessa	20	30	50	BART
Alum Rock	20	30	50	BART
Downtown/San Jose	35	71	106	VTA
Diridon/Arena	20	30	50	BART
Santa Clara	20	30	50	BART
TOTAL	155	258	413	

Source: Travel Demand Forecasts, Hexagon Transportation Consultants, Inc., 2006



**South of I-880/Dixon Landing Road Interchange
PM Peak Period**

4.2.5 VEHICULAR TRAFFIC

4.2.5.1 Existing Conditions

STREET AND HIGHWAY SYSTEM

The Corridor contains two major north-south regional freeways, I-880 and I-680, which parallel one another from southern Alameda County into northern Santa Clara County. The freeways are part of a more elaborate regional roadway system that converges in Santa Clara County around the San Jose Central Business District. Other freeways and expressways that traverse the study area include SR 237/Calaveras Boulevard, Montague Expressway, Guadalupe Parkway/SR 87, US 101, and Capitol Expressway. These existing roadways can be seen on Figure 2.3-1 in

Chapter 2, *Introduction*. Major arterials, such as Great Mall Parkway, Tasman Drive, Hostetter Road/Murphy Avenue/Brokaw Road, Berryessa Road/Hedding Street, Mabury Road/Taylor Street, McKee Road/Julian Street, and Alum Rock Avenue/Santa Clara Street/The Alameda, traverse the study area from east to west. Major north-south streets within the study area include the 10th/11th Street couplet, 13th Street/Old Oakland Road, Coleman Avenue, and De La Cruz Boulevard. The key freeways and expressways are described in more detail below.

- ❑ I-880 extends in a north-south direction from its junction with I-280 near downtown San Jose to I-80 in Oakland. Within the study area, I-880 has six mixed-flow lanes in Santa Clara County.
- ❑ US 101 is an eight-lane freeway (three mixed-flow lanes and one HOV lane in each direction). US 101 extends northward through San Francisco and southward through Gilroy.
- ❑ I-680 is a six- to eight-lane freeway providing regional access between its junction with I-280 and US 101 near downtown San Jose through the East Bay to its junction with I-80 in Fairfield.
- ❑ I-280 connects from US 101 in San Jose to I-80 in San Francisco. It is generally an eight-lane freeway in the vicinity of downtown San Jose. It has auxiliary lanes between some interchanges.

- ❑ SR 237 is a six-lane freeway that extends in an east-west direction providing access between I-880 and US 101. Two of the six lanes are designated HOV lanes. Between I-880 and I-680, SR 237 is a four-to six-lane signalized arterial.
- ❑ SR 87 connects from SR 85 in south San Jose to US 101 near the SJIA. It is generally a four-lane freeway with auxiliary lanes near the I-280 interchange. The SR 87 HOV lane widening project, a project that will provide HOV lanes between Julian Street and SR 85, is currently being constructed. This project is expected to be completed in 2007.
- ❑ San Tomas Expressway is a six-to eight-lane expressway that is oriented in a north-south direction. It has two to three mixed-flow lanes and one reversible HOV lane (restricted hours only) in each direction of travel.
- ❑ El Camino Real is a six-lane major arterial that is oriented in an east-west direction, extending westward from The Alameda towards Mountain View.
- ❑ Montague Expressway is a six-lane expressway with full freeway interchanges at I-680 and I-880. There is a reversible HOV lane on Montague Expressway between South Milpitas Boulevard and De La Cruz Boulevard, which effectively gives three lanes in the westbound direction during the morning peak hours and three lanes eastbound direction during the evening peak hours.
- ❑ Capitol Avenue is a north-south divided roadway that extends from Montague Expressway south through San Jose. Although the majority of Capitol Avenue is

a four-lane divided roadway, some portions consist of six lanes. The VTA's Capitol Corridor Light Rail line runs along Capitol Avenue with a station located at Montague Expressway and Capitol Avenue.

- ❑ Great Mall Parkway is a six-lane arterial extending from I-880 to Montague Expressway. West of I-880, Great Mall Parkway becomes Tasman Drive. It merges into Capitol Avenue south of Montague Expressway.

EXISTING TRAFFIC VOLUMES AND LEVEL OF SERVICE

Freeways

This section discusses existing AM- and PM-peak period traffic volumes, speeds, density, and level of service for selected freeways in the study area. Table 4.2-14 defines the level of service applied to freeways, while Table 4.2-17 summarizes the existing freeway level of service in the Project area, obtained from the latest available CMP Annual Monitoring Report. The most recent freeway volume data was 2004. Freeway segments in Table 4.2-17 are grouped by proposed BART station areas that would most affect the respective freeway segments. The results show that 53 of the 96 directional freeway segments analyzed operate at an unacceptable Level of Service F (LOS F) during at least one peak hour. Speed on the highly congested segments was frequently only 10 to 15 mph.

TABLE 4.2-14:

Freeway Segment Level of Service Definitions	
LEVEL OF SERVICE	DENSITY (vehicles/mile/lane)
A	<11.0
B	11.1 - 18.0
C	18.1 - 26.0
D	26.1 - 46.0
E	46.1 - 58.0
F	>58

Source: 2004 Monitoring and Conformance Report, Santa Clara Valley Transportation Authority, Congestion Management Program, March 2005.

TABLE 4.2-15:

2005 Existing Condition Intersection Summary		
STATION	# OF STUDY INTERSECTIONS	# OF 2005 EXISTING INTERSECTIONS WITH UNACCEPTABLE LOS¹
South Calaveras Future ----- Montague/Capitol	36	2
Berryessa	12	0
Alum Rock	19 ²	0
Diridon/Arena	34	0
Santa Clara	23	2
TOTAL	124	4

¹ LOS E or F for a local intersection, LOS F for a CMP intersection during at least one AM- or PM-peak hour.
² One of the intersections analyzed for the Berryessa Station is also analyzed for Alum Rock Station.

Source: Hexagon Transportation Consultants, Inc., traffic impact analysis reports, 2006.

TABLE 4.2-16:

Intersection LOS Impacts for Existing, Without Project, and Without Project with Mitigation Conditions					
STATION	# OF STUDY INTERSECTIONS	# OF 2005 EXISTING INTERSECTIONS WITH UNACCEPTABLE LOS¹	# OF 2030 INTERSECTIONS WITH UNACCEPTABLE	# OF 2030 INTERSECTIONS WITH POSSIBLE MITIGATION	REMAINING # OF INTERSECTIONS WITH UNACCEPTABLE LOS¹
South Calaveras Future					
Montague/ Capitol	36	2	24	8	16
Berryessa	12	0	10	5	5
Alum Rock	19 ²	0	12	5	7
Diridon/Arena	34	0	19	7	12
Santa Clara	23	2	19	7	12
TOTAL	124	4	84	32	52

¹ LOS E or F for a local intersection, LOS F for a CMP intersection during at least one AM- or PM-peak hour.
² One of the intersections analyzed for the Berryessa Station is also analyzed for the Alum Rock Station.

Source: Travel Demand Forecasts, Hexagon Transportation Consultants, Inc., 2006

Intersections

Existing traffic volumes for 124 signalized intersections in the study area are documented in three traffic impact analysis reports addressing the station areas in the cities of Milpitas, San Jose, and Santa Clara. The Downtown San Jose Station area is omitted from the vehicle traffic analysis because it is

planned to have no drive access. These intersections were selected by the local cities for analysis in the traffic study because of their concern regarding potential impacts. Some selected intersections are relatively far from the station sites, but were chosen because they were on anticipated station access traffic routes.

Intersection level of service was calculated

using the TRAFFIX software system, which is consistent with the *2000 Highway Capacity Manual*. Level of service at signalized intersections is based upon the average control delay experienced by vehicles at an intersection and is assigned a letter designation, ranging from LOS A to LOS F, corresponding to average delay. The level of service designations for signalized intersections are as follows:

AVERAGE VEHICLE	
LOS	DELAY (seconds)
A	≤ 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	> 80.0

LOS A describes traffic operations with very low delay and all intersection approaches open. LOS F describes failure conditions, with unacceptable delays to most vehicles, long

queues, and stop-and-go flow. LOS F results when arrivals exceed the capacity of an intersection during a specified time period.

The intersection level of service standard for three cities (Milpitas, San Jose, and Santa Clara) affected by the Project is LOS D or better on local streets, unless the intersection is a CMP intersection, in which case the standard is LOS E or better. CMP intersections are denoted with an asterisk in the text. The analysis results are summarized in Table 4.2-15 by BART station area. Of the 124 study intersections, existing conditions at 4 intersections fail to meet city level of service standards of LOS D or better, or LOS E or better if the intersection is a CMP intersection. These include: City of Milpitas - #17 Old Oakland/Main Street and Montague Expressway (PM) and #18 Trade Zone Boulevard and Montague Expressway (PM) and City of Santa Clara - #14 Coleman Avenue and I-880 NB ramps (AM) and #15 De La Cruz Boulevard and Central Expressway (AM and PM).

4.2.5.2 Project Impacts and Mitigation Measures

The intersection and freeway level of service thresholds for identifying when traffic impacts of the Project should be considered for possible mitigation were provided in Table 4-1. The criteria include both VTA and local city criteria. It should be noted that impacts of the

Project are based on the addition of station traffic to 2030 Without Project conditions traffic volumes and compared to 2030 Without Project with Improvements conditions. The Project is said to create a significant impact if the criteria in Table 4-1 is exceeded. A significant impact is said to be satisfactorily mitigated when measures are implemented that would restore intersection levels of operation to Year 2030 Without Project with Improvements conditions or better.



2030 WITHOUT PROJECT STREET AND HIGHWAY CONDITIONS

Future Roadway Network

Several roadway transportation improvements are planned and would be operational by 2030. These improvements consist of street and freeway widening and interchange improvements as identified in the FEIR. There are no new freeways planned.

Freeway Traffic Volumes and Level of Service

The 2030 Without Project conditions traffic and level of service for the 96 study freeway segments are summarized in Table 4.2-17. Level of service is generally projected to deteriorate from the existing conditions. In general, traffic density is projected to increase by 2030, reflecting increasing congestion as a result of traffic capacity not keeping up with traffic demand.

see Table 4.2-17 >>

TABLE 4.2-12:

Freeway Traffic Volumes and Levels of Service for 2004 Existing, 2030 Without Project, and 2030 BART Extension Project Conditions¹

FRWY.	SEGMENT	DIR.	PEAK HOUR ²	2000 EXISTING CONDITIONS				2030 WITHOUT PROJECT CONDITIONS				2030 BART EXTENSION PROJECT			
				AVG. SPEED	2000 VOLUME	DENSITY	LOS	AVG. SPEED	2000 VOLUME	DENSITY	LOS	AVG. SPEED	2000 VOLUME	DENSITY	LOS
MILPITAS³															
I-680	Hostetter to Capitol	NB	AM	64	8,450	33.0	D	64	9,558	37.3	ED	64	9,418	36.8	D
I-680	Capitol to Montague	NB	AM	65	7,540	29.0	D	65	10,299	39.6	D	65	10,053	38.7	D
I-680	Montague to Yosemite	NB	AM	66	6,340	24.0	C	66	8,961	33.9	D	66	8,988	34.0	D
I-680	Yosemite to Calaveras	NB	AM	57	7,780	39.0	D	57	8,961	39.3	D	57	8,988	39.4	D
I-680	Calaveras to Jacklin	NB	AM	59	6,550	37.0	D	59	8,184	39.6	D	59	7,938	38.4	D
I-680	Jacklin to Scott Creek	NB	AM	39	6,200	53.0	E	39	8,988	76.8	F	39	8,921	76.2	F
I-880	Brokaw to Montague	NB	PM	65	5,850	30.0	D	65	7,722	39.6	D	65	7,485	38.4	D
I-880	Montague to Great Mall	NB	AM	66	5,150	26.0	C	66	8,352	42.2	D	66	8,396	42.4	D
I-880	Great Mall to SR 237	NB	PM	41	6,270	51.0	ED	41	8,197	57.1	E	41	8,200	57.1	E
I-880	SR 237 to Dixon Landing	NB	PM	15	5,130	95.0	F	15	11,190	213.1	F	15	11,078	211.0	F
I-880	Dixon Landing to SR 237	SB	AM	65	7,020	30.0	D	65	11,500	50.5	E	65	11,034	48.5	E
I-880	SR 237 to Great Mall	SB	PM	66	4,750	24.0	C	66	8,832	44.6	D	66	8,575	43.3	D
I-880	Great Mall to Montague	SB	PM	39	6,200	53.0	E	39	8,609	73.6	F	39	8,540	73.0	F
I-880	Montague to Brokaw	SB	PM	21	5,100	81.0	F	21	8,309	131.9	F	21	8,262	131.1	F
I-880	Scott Creek to Jacklin	SB	PM	64	6,340	33.0	D	64	9,073	47.3	E	64	8,963	46.7	E
I-880	Jacklin to Calaveras	SB	PM	66	5,350	27.0	D	66	8,881	38.4	D	66	8,989	38.9	D
I-880	Calaveras to Yosemite	SB	PM	61	7,690	36.0	D	61	9,846	40.4	D	61	9,965	40.8	D
I-880	Yosemite to Montague	SB	PM	30	7,680	64.0	F	30	9,846	82.1	F	30	9,965	83.0	F
I-880	Montague to Capitol	SB	PM	29	7,660	66.0	F	29	11,052	95.3	F	29	11,143	96.1	F
I-880	Capitol to Hostetter	SB	PM	17	6,120	90.0	F	17	10,466	153.9	F	17	10,178	149.7	F
SAN JOSE															
BERRYESSA STATION															
US 101	McKee to Mabury ³	NB	AM	16	4,420	92.0	F	16	10,342	184.7	F	16	9,934	177.4	F
US 101	Mabury to Oakland ³	NB	AM					16	10,571	188.8	F	16	10,236	182.8	F
US 101	Oakland to I-880	NB	AM	21	5,040	80.0	F	21	10,842	147.5	F	21	10,165	138.3	F
I-680	Alum Rock to McKee	NB	AM	32	7,810	61.0	F	32	9,437	65.5	F	32	9,640	66.9	F
I-680	McKee to Berryessa	NB	AM	50	8,800	44.0	D	50	9,589	47.9	E	50	9,564	47.8	E
I-680	Berryessa to Hostetter	NB	AM	63	8,570	34.0	D	63	10,562	37.3	D	63	10,363	36.6	D
I-680	Hostetter to Berryessa	SB	PM	27	7,340	68.0	F	27	11,678	96.1	F	27	11,424	94.0	F
I-680	Berryessa to McKee	SB	PM	37	8,140	55.0	E	37	10,960	74.1	F	37	10,828	73.2	F
I-680	McKee to Alum Rock	SB	PM	39	8,270	53.0	E	39	10,731	61.1	F	39	10,499	59.8	F

FRWY.	SEGMENT	DIR.	PEAK HOUR ²	2000 EXISTING CONDITIONS				2030 WITHOUT PROJECT CONDITIONS				2030 BART EXTENSION PROJECT			
				AVG. SPEED	2000 VOLUME	DENSITY	LOS	AVG. SPEED	2000 VOLUME	DENSITY	LOS	AVG. SPEED	2000 VOLUME	DENSITY	LOS
US 101	I-880 to Oakland	SB	PM	15	4,280	95.0	F	15	10,600	201.9	F	15	10,660	203.0	F
US 101	Oakland to Mabury ³	SB	PM					32	10,239	91.4	F	32	10,200	91.1	F
US 101	Mabury to McKee ³	SB	PM	32	5,950	62.0	F	32	9,048	94.3	F	32	9,091	94.7	F
ALUM ROCK															
US 101	Tully to Story	NB	AM	51	6,580	43.0	D	51	11,090	61.7	F	51	10,955	61.4	F
US 101	Story to I-280	NB	AM	67	3,620	18.0	B	67	6,278	31.2	D	67	6,267	31.2	D
US 101	I-280 to Santa Clara	NB	AM	29	5,740	66.0	F	29	9,179	90.4	F	29	9,310	91.7	F
US 101	Santa Clara to McKee	NB	AM	19	4,850	85.0	F	19	7,301	128.1	F	19	6,942	121.8	F
I-280	10th to McLaughlin	EB	PM	45	8,640	48.0	E	45	13,159	65.0	F	45	13,003	64.2	F
I-280	McLaughlin to US 101	EB	PM	64	8,450	33.0	D	64	9,394	36.7	D	64	9,247	36.1	D
I-680	US 101 to King	NB	PM	66	6,600	25.0	C	66	9,021	34.2	D	66	8,970	34.0	D
I-680	King to Capitol	NB	PM	55	9,240	40.0	D	55	13,237	43.8	D	55	13,121	43.4	D
I-680	Capitol to Alum Rock	NB	AM	50	8,800	44.0	D	50	9,623	42.8	D	50	9,908	44.0	D
I-680	Alum Rock to McKee	NB	AM	32	7,810	671.0	F	32	9,437	65.5	F	32	9,640	66.9	F
I-680	McKee to Alum Rock	SB	PM	39	8,270	53.0	E	39	10,731	61.1	F	39	10,499	59.8	F
I-680	Alum Rock to Capitol	SB	AM	22	6,860	78.0	F	22	9,018	102.5	F	22	8,554	97.2	F
I-680	Capitol to King	SB	AM	19	7,430	85.0	F	19	12,519	131.8	F	19	12,067	127.0	F
I-680	King to US 101	SB	AM	12	5,180	108.0	F	12	8,490	176.9	F	12	8,304	173.0	F
I-280	US 101 to McLaughlin	WB	AM	11	4,880	111.0	F	11	8,490	193.0	F	11	8,304	188.7	F
I-280	McLaughlin to 10th	WB	AM	24	7,100	74.0	F	24	13,266	122.8	F	24	12,940	119.8	F
US 101	McKee to Santa Clara	SB	PM	28	5,630	67.0	F	28	7,374	87.8	F	28	7,625	90.8	F
US 101	Santa Clara to I-280	SB	PM	22	5,210	79.0	F	22	10,162	132.0	F	22	10,394	135.0	F
US 101	I-280 to Story	SB	PM	36	6,160	57.0	E	36	5,823	53.9	E	36	5,780	53.5	E
US 101	Story to Tully	SB	PM	23	5,310	77.0	F	23	12,390	134.7	F	23	12,520	136.1	F
DIRIDON/ARENA															
SR 87	Curtner to Almaden Expressway	NB	AM	14	2,770	99.0	F	14	4,173	149.0	F	14	4,442	158.6	F
SR 87	Almaden Expressway to Alma	NB	AM	21	3,400	81.0	F	21	5,585	133.0	F	21	5,677	135.2	F
SR 87	Alma to I-280	NB	AM	64	4,100	32.0	D	64	5,082	39.7	D	64	4,874	38.1	D
SR 87	I-280 to Julian	NB	AM	66	3,300	25.0	C	66	3,491	26.4	D	66	3,403	25.8	C
SR 87	Julian to Coleman	NB	AM	50	4,400	44.0	D	50	4,878	39.0	D	50	4,869	39.0	D
I-280	I-280 to Meridian	EB	PM	27	6,890	69.0	F	27	9,207	85.3	F	27	9,206	85.2	F
I-280	Meridian to Bird	EB	PM	26	7,380	71.0	F	26	14,001	97.9	F	26	14,208	99.4	F

FRWY.	SEGMENT	DIR.	PEAK HOUR ²	2000 EXISTING CONDITIONS				2030 WITHOUT PROJECT CONDITIONS				2030 BART EXTENSION PROJECT			
				AVG. SPEED	2000 VOLUME	DENSITY	LOS	AVG. SPEED	2000 VOLUME	DENSITY	LOS	AVG. SPEED	2000 VOLUME	DENSITY	LOS
I-280	Bird to SR 87	EB	PM	23	6,990	76.0	F	23	8,992	97.7	F	23	8,976	97.6	F
I-280	SR 87 to 10th	EB	PM	29	7,540	65.0	F	29	14,051	96.9	F	29	14,187	97.8	F
I-280	10th to SR 87	WB	AM	19	6,540	867.0	F	19	12,623	147.6	F	19	12,419	145.3	F
I-280	SR 87 to Bird	WB	AM	13	5,300	102.0	F	13	8,456	162.6	F	13	8,357	160.7	F
I-280	Bird to meridian	WB	AM	16	6,020	94.0	F	16	12,415	141.1	F	16	12,123	137.8	F
I-280	Meridian to I-880	WB	AM	10	4,220	114.0	F	10	6,661	222.0	F	10	6,557	218.6	F
SR 87	Coleman to Julian	SB	PM	18	3,200	89.0	F	18	5,436	120.8	F	18	5,044	112.1	F
SR 87	Julian to I-280	SB	PM	9	2,160	120.0	F	9	4,771	265.1	F	9	4,614	256.3	F
SR 87	I-280 to Alma	SB	PM	16	2,980	93.0	F	16	5,269	164.7	F	16	5,154	161.1	F
SR 87	Alma to Almaden Expressway	SB	PM	25	3,600	72.0	F	25	6,158	123.2	F	25	6,124	122.5	F
SR 87	Almaden Expressway to Curtner	SB	PM	36	4,030	56.0	E	36	4,819	66.9	F	36	4,853	67.4	F

SANTA CLARA

US 101	I-880 to Old Bayshore	NB	AM	12	3,850	107.0	F	12	8,098	224.9	F	12	7,885	219.0	F
US 101	Old Bayshore to First	NB	AM	17	4,640	91.0	F	17	8,541	167.5	F	17	8,557	167.8	F
US 101	First to Guadalupe	NB	AM	24	5,330	74.0	F	24	8,989	124.8	F	24	9,065	125.9	F
US 101	Guadalupe to De La Cruz	NB	AM	28	5,630	67.0	F	28	11,272	100.6	F	28	11,348	101.3	F
US 101	De La Cruz to Montague	NB	AM	42	6,300	50.0	E	42	9,287	63.2	F	42	9,608	65.4	F
US 101	Montague to Great America	NB	AM	63	6,430	34.0	D	63	8,053	36.5	D	63	8,115	36.8	D
I-880	I-280 to Stevens Creek	NB	AM	32	5,860	61.0	F	32	6,310	65.7	F	32	6,099	63.5	F
I-880	Stevens Creek to Bascom	NB	AM	19	4,900	86.0	F	19	8,010	120.5	F	19	7,747	116.5	F
I-880	Bascom to The Alameda	NB	AM	30	5,760	64.0	F	30	6,692	63.7	F	30	6,516	62.1	F
I-880	The Alameda to Coleman	NB	AM	25	5,400	72.0	F	25	7,676	87.7	F	25	7,712	88.1	F
I-880	Coleman to SR 87	NB	AM	46	6,490	47.0	E	46	6,646	48.2	E	46	6,544	47.4	E
I-880	SR 87 to First	NB	PM	66	4,950	25.0	C	66	7,463	37.7	D	66	7,474	37.7	D
I-880	First to US 101	NB	PM	59	6,550	37.0	D	59	7,804	37.8	D	59	7,747	37.5	D
I-880	US 101 to First	SB	PM	10	3,420	114.0	F	10	7,820	260.7	F	10	7,762	258.7	F
I-880	First to SR 87	SB	PM	17	4,590	90.0	F	17	6,965	136.6	F	17	6,979	136.8	F
I-880	SR 87 to Coleman	SB	PM	40	6,240	52.0	E	40	6,965	58.0	F	40	6,979	58.2	F
I-880	Coleman to The Alameda	SB	PM	39	6,200	53.0	E	39	8,962	65.7	F	39	9,104	66.7	F

FRWY.	SEGMENT	DIR.	PEAK HOUR ²	2000 EXISTING CONDITIONS				2030 WITHOUT PROJECT CONDITIONS				2030 BART EXTENSION PROJECT			
				AVG. SPEED	2000 VOLUME	DENSITY	LOS	AVG. SPEED	2000 VOLUME	DENSITY	LOS	AVG. SPEED	2000 VOLUME	DENSITY	LOS
I-880	The Alameda to Bascom	SB	PM	31	5,860	63.0	F	31	8,645	79.7	F	31	8,729	80.5	F
I-880	Bascom to Stevens Creek	SB	PM	41	6,270	51.0	E	41	9,535	66.4	F	41	9,956	69.4	F
I-880	Stevens Creek to I-280	SB	PM	65	6,050	31.0	D	65	7,302	37.4	D	65	7,607	39.0	D
US 101	Great America to Montague	SB	PM	20	4,920	82.0	F	20	8,913	127.3	F	20	9,004	128.6	F
US 101	Montague to De La Cruz	SB	PM	21	5,040	80.0	F	21	9,637	131.1	F	21	9,703	132.0	F
US 101	De La Cruz to Guadalupe	SB	PM	14	4,200	100.0	F	14	11,363	231.9	F	14	11,350	231.6	F
US 101	Guadalupe to First	SB	PM	21	5,100	81.0	F	21	8,332	132.3	F	21	8,378	133.0	F
US 101	First to Old Bayshore	SB	PM	13	3,980	102.0	F	13	6,995	179.4	F	13	6,949	178.2	F
US 101	Old Bayshore to I-880	SB	PM	10	3,420	114.0	F	10	8,192	273.1	F	10	8,321	277.4	F

NOTE:
Impacted freeway segments are shown in Bold.
¹ Includes all freeway segments analyzed as part of the traffic impact analyses.
² The peak hour with the worst level of service is shown on this table.
³ Due to the future Mabury interchange, the segment of McKee to Oakland gets broken into two segments: McKee to Mabury and Mabury to Oakland. Average speed for the existing segment of McKee to Oakland was used for the two new segments.

Source: Santa Clara Valley Transportation Authority, 2004 Monitoring and Conformance Report and Hexagon Transportation Consultants, Inc., Traffic Impact Analysis Reports, 2006.

Intersection Traffic Volumes and Level of Service

Future 2030 traffic volumes for the 124 signalized intersections in the study area are documented in three traffic impact analysis reports addressing the station areas in the cities of Milpitas, San Jose, and Santa Clara. Intersection level of service was used to evaluate traffic operations at the study intersections under year 2030 conditions. Volumes from the 2030 model forecasts and the adjustment process were used to calculate intersection levels of service. The Project intersection volumes include the park-and-ride and kiss-and-ride vehicle trips generated at each BART station.

The results of the level of service analysis under the 2030 Without Project conditions show that 84 of the 124 study intersections are projected to operate at LOSE or LOS F during at least one peak hour (LOS F if the intersection is a CMP intersection).

Based on the results of the year 2030 Without Project conditions level of service analysis, necessary improvements to support year 2030 projected traffic volumes were determined for all local study intersections projected to operate at LOS E or LOS F

(LOS F for CMP intersections). The resulting year 2030 Without Project with Improvements conditions served as a base from which to determine impacts attributable to the BART Extension Project. Without the improvements in place, level of service conditions with the Project would not accurately reflect impacts due to station traffic, but rather show problem areas under 2030 Without Project conditions compounded by the Project. Table 4.2-16 summarizes results of this analysis. Without mitigation, 84 intersections have an unacceptable level of service under 2030 Without Project conditions. This total reduces to 52 intersections with an unacceptable level of service under 2030 Without Project with Improvements.

In determining feasibility, mitigation measures are primarily limited by available right-of-way. A street that has made maximum use of the public and available private ROW is assumed to be built out, with no further widening feasible. There may be other considerations as well, such as the need for pedestrian and bicycle facilities, which would render infeasible further widening.

2030 PROJECT IMPACTS AND MITIGATION MEASURES

This section provides an analysis of the traffic level of service, impacts, and mitigation measures for the Project. Freeways segments were evaluated, along with the intersections located within the station areas.

Freeways

Year 2030 BART Extension Project traffic volumes for the subject freeway segments were obtained from the traffic model for the Project if the Diridon/Arena Station Parking Structure Option were chosen. The number of freeway segments projected to be impacted by the Project by station area is, as follows:

- Montague/Capitol → 0 of 20 studied
- Berryessa → 0 of 12 studied
- Alum Rock → 2 of 20 studied
- Diridon/Arena → 0 of 18 studied
- Santa Clara → 0 of 26 studied

A summary of the station area analysis results is presented by Table 4.2-17, which includes links projected to experience traffic impacts from the Project. Based on the summary of impacts, the 2030 BART Extension Project will divert some of the through trips along the freeways to the BART system. However, trips for station access (including self-drive, drop-off, etc.) will generate new trips of shorter duration. In comparing the BART Extension Project and Without Project conditions, the Project improves the traffic volumes/conditions in some segments. Even though the Project would impact two freeway segments near the Alum Rock Station area, the effects are marginal. The freeway segments level of service analysis shows that the level of service would remain the same for all study segments from the Without Project conditions to the Project, with the exception of one segment. The segment of SR 87 from I-280 to Julian Street is projected to improve from a LOS D under the Without

Project conditions to LOS C under the Project. In addition, the traffic density, the primary measure of level of service, is projected to be lower under the Project for 58 of the 96 study freeway segments. Thus, the BART Extension Project has a beneficial effect on freeway traffic overall, if the Diridon/Arena Station Parking Structure Option is selected. Freeway impacts associated with the Diridon/Arena Station No Parking Option are discussed below.

Peak period trips removed from roadways in 2025 were estimated from the regional travel demand model. With 25,500 fewer peak-period roadway trips than Without Project, the BART Extension Project removes trips from roadways. At freeways crossing the Alameda-Santa Clara County line, this reduction amounts to about 1,300 to 1,400 vehicles removed in the AM and PM peak hours, respectively—about 3.5 percent of the peak-hour traffic volume on the freeways.

Design Change 52. Santa Clara Station (With No Parking Option at Diridon/Arena Station). The study freeway segments for the Santa Clara Station were also analyzed based on the Diridon/Arena Station No Parking Option.

■ **IMPACT.** The results of the analysis show that the Project would add new trips totaling more than 1 percent of the freeway capacity on four of the 21 directional freeway segments identified to operate at LOS F under 2030 Without Project conditions. The four freeway segments are:

- I-880, Bascom Avenue to The Alameda (northbound AM peak hour)
- I-880, The Alameda to Coleman Avenue (northbound AM peak hour)
- I-880, Coleman Avenue to The Alameda (southbound PM peak hour)
- I-800, The Alameda to Bascom Avenue (southbound PM peak hour)

■ MITIGATION.

The mitigation necessary to reduce significant impacts at these freeway segments is the widening of the freeway. Due to the substantial cost, this measure is not considered feasible, resulting in a significant unavoidable impact to freeways.

Intersections

Table 4.2-18 summarizes the overall impact of the Project on study intersections in the cities of Milpitas, San Jose, and Santa Clara. There are no intersection impacts from the Project in the City of Fremont. A total of 29 of the 124 study intersections would be impacted in 2030. This total accounts for intersections assumed to have been mitigated, if possible, for other traffic growth projected by the model. Of the 29 intersections, there appears to be feasible mitigation measures for 10 intersections. The remaining 19 intersections impacted by station traffic do not have feasible mitigation measures due to physical constraints, cost and/or other reasons as identified. The text that follows discusses these impacts in more detail and describes the proposed mitigation measures. Because the mitigation analysis year is 2030, actual implementation of the mitigation

measures is not required in the near term and monitoring and assessing the need for the improvements will be a long-term cooperative relationship between VTA and local jurisdictions. In addition, ongoing and future studies may result in modified improvements for the mitigation of BART Extension Project impacts. It should be noted that all intersections with a '*' indicate that this is a Congestion Management Program intersection that has specific applicable criteria as noted in Table 4-1.

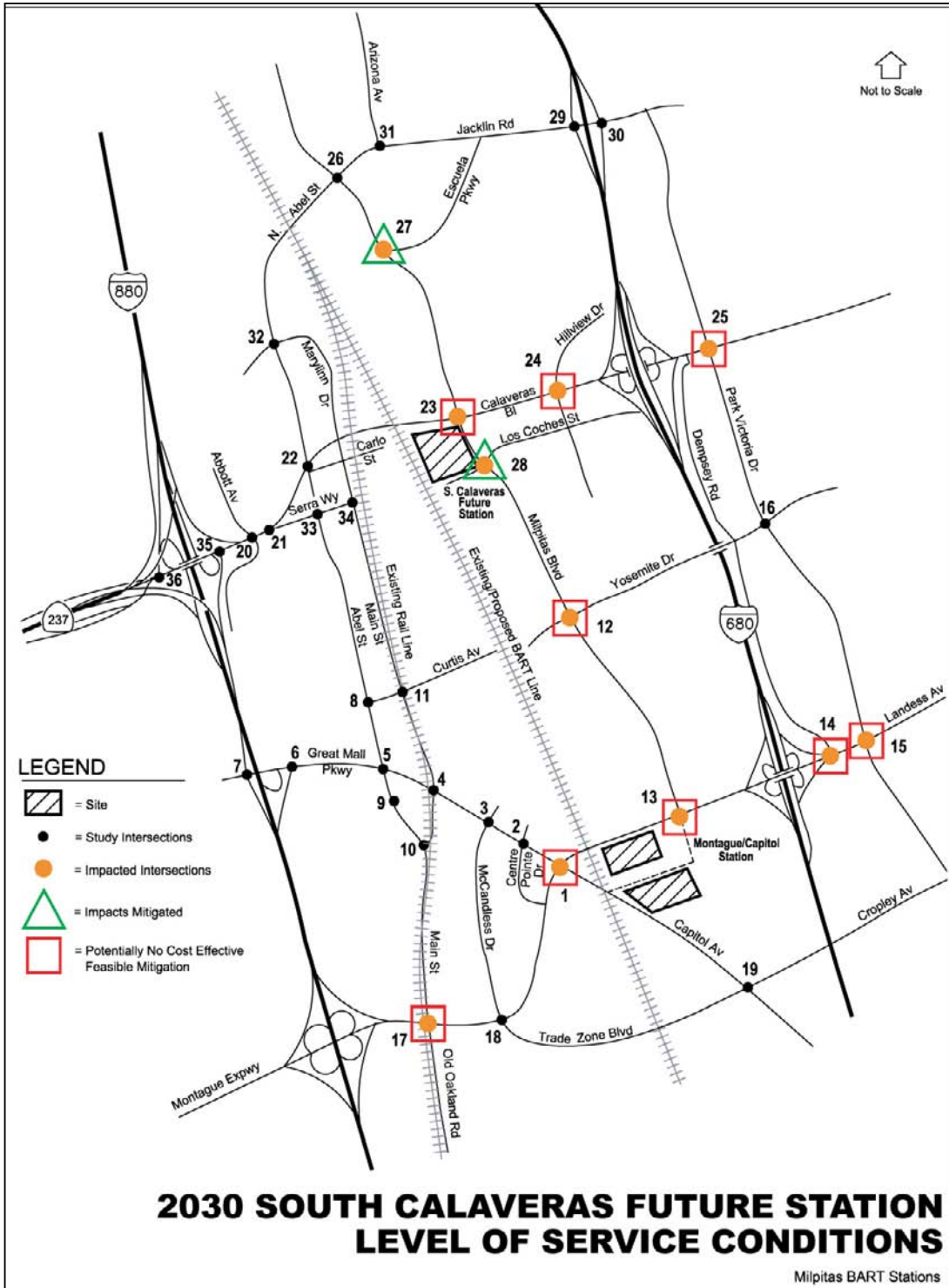


TABLE 4.2-18:

BART Extension Project Peak Hour Intersection Impact Summary				
STATION	# OF STUDY INTERSECTIONS	# OF IMPACTED INTERSECTIONS	# OF INTERSECTIONS MITIGATED	# OF INTERSECTIONS W/NO FEASIBLE MITIGATION
South Calaveras Future	36	11	2	9
Montague/Capitol				
Berryessa	12	3	1	2
Alum Rock	19 ¹	6	2	4
Diridon/Arena	34	3	2	1
Santa Clara	23	6	3	3
TOTAL	124	29	10	19

¹ One of the intersections analyzed for the Berryessa Station is also analyzed for the Alum Rock Station.

Source: Hexagon Transportation Consultants, Inc., traffic impact analysis reports, 2006.



**Figure 4.2-1:
2030 South Calaveras Future Station Level of Service Conditions**

Design Change 17. Montague/Capitol Station (With the South Calaveras Future Station).

The results of the level of service analysis under 2030 BART Extension Project conditions with the Montague/Capitol Station and South Calaveras Future Station are presented in Figure 4.2-1. The results show that, measured against applicable level of service standards, 19 of the 36 signalized study intersections would operate at an unacceptable level under BART Extension Project conditions, as identified below. Note that, of the 19 signalized intersections projected to operate at unacceptable levels, only 11 would be adversely impacted by the Project during at least one of the peak hours according to the significant impact criteria. The 19 signalized study intersections operating at an unacceptable level include:

- ❑ Great Mall Parkway and Montague Expressway* (Impact: AM and PM) (Map location #1)
- ❑ Abel Street and Great Mall Parkway (Map location #5)
- ❑ I-880 NB ramps and Great Mall Parkway (Map location #6)
- ❑ Milpitas Boulevard and Yosemite Drive (Impact: AM only) (Map location #12)
- ❑ Milpitas Boulevard and Montague Expressway* (Impact: PM only) (Map location #13)
- ❑ Dempsey Road and Landess Avenue (Impact: AM only) (Map location #14)
- ❑ Park Victoria Drive and Landess Avenue (Impact: AM and PM) (Map location #15)
- ❑ Park Victoria Drive and Yosemite Drive (Map location #16)
- ❑ Old Oakland/Main Street and Montague Expressway* (Impact: AM only) (Map location #17)
- ❑ Trade Zone Boulevard and Montague Expressway* (Map location #18)
- ❑ Capitol Avenue and Cropley Avenue (Map location #19)
- ❑ South Calaveras Future Station Vicinity
- ❑ Abbott Avenue and Calaveras Boulevard (Map location #20)
- ❑ Milpitas Boulevard and Calaveras Boulevard* (Impact: AM and PM) (Map location #23)
- ❑ Hillview Drive and Calaveras Boulevard (Impact: PM only) (Map location #24)
- ❑ Park Victoria Drive and Calaveras Boulevard (Impact: AM only) (Map location #25)
- ❑ Milpitas Boulevard and Jacklin Road (Map location #26)
- ❑ Milpitas Boulevard and Escuela Drive (Impact: AM only) (Map location #27)
- ❑ Milpitas Boulevard and Los Coches Street (Impact: PM only) (Map location #28)
- ❑ Abel Street and Marylinn Drive (Map location #32)

All other signalized study intersections would operate at an acceptable level, according to level of service standards.

The intersection impacts and recommended mitigation measures associated with the Montague/Capitol Station and the South Calaveras Future Station are described below. Table 4.2-18 provides an overall summary for the stations. Intersections for which cost-effective feasible mitigation measures are not possible and intersections where cost-effective feasible mitigation measures do not improve the intersection to acceptable levels are also discussed and identified on Figure 4.2-1.

Great Mall Parkway and Montague Expressway* (No Cost-Effective Feasible Mitigation Measures) (Map location #1)

■ IMPACT:

The level of service would be an unacceptable LOS F during both the AM and PM peak hours under 2030 Without Project with Improvements conditions, and the intersection would experience an increase in critical-movement delay of 4 or more seconds and an increase in the V/C of .01 or more under 2030 BART Extension Project conditions. This constitutes a significant impact by CMP standards.

■ MITIGATION MEASURE:

No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions. The identified 2030 Without Project improvement includes the addition of an exclusive southbound right-turn lane. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. The necessary improvement to mitigate the Project impact at this intersection to an acceptable level will require grade separation of the intersection. It should be noted that the grade separation of this intersection is included in the Valley Transportation Plan 2030 (VTP 2030) project list. However, this improvement was not included as part of the year 2030 roadway network, as it was not included in the VTA 2030 (SVRTC) traffic model used for this analysis. Thus, as a conservative approach, the worst-case intersection configuration was assumed. Although the BART Extension Project would impact this intersection, grade separation of this intersection was identified as the needed improvement under 2030 Without Project conditions. Because the Project would contribute to the need for grade separation of the Great Mall/Montague intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. The Project would cause a significant unavoidable impact at this intersection.

**Milpitas Boulevard and Yosemite Drive
(No Cost-Effective Feasible Mitigation Measures) (Map location #12)**

■ IMPACT:

The level of service would be an unacceptable LOS F and E during the AM and the PM peak hours, respectively, under 2030 Without Project with Improvements conditions, and the intersection would experience an increase in critical-movement delay of 4 or more seconds and an increase in the V/C ratio of .01 or more during both peak hours under 2030 BART Extension Project conditions. This constitutes a significant impact by City of Milpitas standards.

■ MITIGATION MEASURE:

No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions. Possible 2030 Without Project improvements include the addition of a second southbound left-turn lane, exclusive northbound and southbound right-turn lanes and conversion of the eastbound and westbound shared through and left-turn lanes to protected left-turn lanes with an exclusive westbound right-turn lane. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of these traffic improvements. The necessary improvements to mitigate the Project impact at this intersection to an acceptable level consist of the addition of a second westbound left-turn lane on Yosemite Drive and conversion of the westbound right-turn lane to a free-right-turn lane. However, these improvements would require the widening of both Milpitas Boulevard and Yosemite Drive, which is not feasible due to right-of-way constraints. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

**Milpitas Boulevard and Montague
Expressway* (No Cost-Effective Feasible
Mitigation Measures) (Map location #13)**

■ IMPACT:

The level of service would be an unacceptable LOS F under 2030 Without Project with Improvements conditions, and the intersection would experience an increase in critical-movement delay of 4 or more seconds and an increase in the V/C of .01 or more during the PM peak hour under 2030 BART Extension Project conditions. This constitutes a significant impact by CMP standards.

■ MITIGATION MEASURE:

No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions.

The identified 2030 Without Project possible improvements include the addition of a left-turn, a through, and a right-turn lane on the south approach and the addition of a third southbound shared through and left-turn lane. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of these traffic improvements. Due to the significantly high projected volumes, there are no feasible at-grade improvements to improve operation levels at this intersection with the Project. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

**Dempsey Road and Landess Avenue
(No Cost-Effective Feasible Mitigation
Measures) (Map location #14)**

■ IMPACT:

The level of service would be an unacceptable LOS E during the AM peak hour under 2030 Without Project with Improvements conditions, and the intersection would experience an increase in critical-movement delay of 4 or more seconds and an increase in the V/C of .01 or more under 2030 BART Extension Project conditions. This constitutes a significant impact by City of Milpitas standards.

■ MITIGATION MEASURE:

No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions. The identified 2030 Without Project possible improvements include the addition of a second northbound through lane and a third westbound through lane. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. The necessary improvement to mitigate the Project impact at this intersection to an acceptable level consists of the addition of a second southbound right-turn lane on Dempsey Road. However, this improvement is not feasible due to right-of-way constraints. Should

a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

**Park Victoria Drive and Landess Avenue
(No Cost-Effective Feasible Mitigation
Measures) (Map location #15)**

■ IMPACT:

The level of service would be an unacceptable LOS E and F during the AM and the PM peak hour, respectively, under 2030 Without Project with Improvements conditions, and the intersection would degrade to LOS F during the AM peak hour and experience an increase in critical-movement delay of 4 or more seconds and an increase in the V/C ratio of .01 or more during the PM peak hour under 2030 BART Extension Project conditions. This constitutes a significant impact by City of Milpitas standards.

■ MITIGATION MEASURE:

No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions. The identified 2030 Without Project possible improvements include the addition of second northbound, southbound, and eastbound left-turn lanes and the addition of an exclusive northbound right-turn lane. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. The necessary improvement to mitigate the Project impact at this intersection to an acceptable level consists of the widening of Park Victoria Drive from four to six lanes and the conversion of the eastbound right-turn lane on Landess Avenue to a free-right-turn lane. However, the widening of Park Victoria Drive to this extent is not feasible due to right-of-way constraints. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

Old Oakland/Main Street and Montague Expressway* (No Cost-Effective Feasible Mitigation Measures) (Map location #17)

■ IMPACT:

The level of service would be an unacceptable LOS F under 2030 Without Project with Improvements conditions, and the intersection would experience an increase in the V/C of .01 or more during the AM peak hour under 2030 BART Extension Project conditions. This constitutes a significant impact by CMP standards.

■ MITIGATION MEASURE:

No other cost-effective feasible improvements can be made at this intersection beyond the currently planned widening Montague Expressway to four lanes in each direction. The necessary improvements to mitigate the Project impact at this intersection to an acceptable level consist of the addition of a third northbound and westbound left-turn lanes, a third northbound through lane, and conversion of the southbound right-turn lane to a free-right-turn lane. However, the widening of Old Oakland/Main Street and Montague Expressway to this extent is not feasible due to right-of-way constraints. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

Milpitas Boulevard and Calaveras Boulevard* (No Cost-Effective Feasible Mitigation Measures) (Map location #23)

■ IMPACT:

The level of service would be an unacceptable LOS F during both the AM and PM peak hours under 2030 Without Project with Improvements conditions, and the intersection would experience an increase in critical-movement delay of 4 or more seconds and an increase in the V/C of .01 or more during both peak hours under 2030 BART Extension Project conditions. This constitutes a significant impact by CMP standards.

■ MITIGATION MEASURE:

No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions. The identified 2030 Without Project possible improvement includes the addition of a second westbound left-turn lane. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. The necessary improvements to mitigate the Project impact at this intersection to an acceptable level consist of the addition of third northbound, southbound, and eastbound left-turn lanes, and a third westbound through lane. It should be noted that the Valley Transportation Plan 2030 (VTP 2030) project list includes a project that would widen Calaveras Boulevard to six lanes from Abel Street to Milpitas Boulevard. However, because this improvement was not included as part of the year 2030 roadway network used in the VTA 2030 (SVRTC) traffic model used for this analysis, the analysis conservatively assume that the improvement would not be in place by 2030. In addition, the widening of Milpitas Boulevard to this extent is not feasible due to right-of-way constraints. Although the BART Extension Project would impact this intersection, the widening of Calaveras Boulevard was identified as one of the needed improvements under 2030 Without Project conditions. Because the Project would contribute to the need for the widening of Calaveras Boulevard, the BART Extension Project will contribute a “fair share” amount toward the implementation of this improvement. The Project would cause a significant unavoidable impact at this intersection.

Hillview Drive and Calaveras Boulevard (No Cost-Effective Feasible Mitigation Measures) (Map location #24)

■ IMPACT:

The level of service would be LOS D under 2030 Without Project with Improvements conditions, and the intersection would degrade to an unacceptable LOS E during the PM peak hour under 2030 BART

Extension Project conditions. This constitutes a significant impact by City of Milpitas standards.

■ **MITIGATION MEASURE:**

No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions. The identified 2030 Without Project necessary improvements include the addition of a second northbound left-turn lane and an exclusive right-turn lane. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. The necessary improvements to mitigate the Project impact at this intersection to an acceptable level consist of the addition of a second westbound left-turn lane on Calaveras Boulevard. However, the widening of Hillview Drive and Calaveras Boulevard is not feasible due to right-of-way constraints. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

Park Victoria Drive and Calaveras Boulevard (No Cost-Effective Feasible Mitigation Measures) (Map location #25)

■ **IMPACT:**

The level of service would be LOS E during the AM peak hour under 2030 Without Project with Improvements conditions and the intersection would experience an increase in critical-movement delay of 4 or more seconds and an increase in the V/C of .01 or more under 2030 BART Extension Project conditions. This constitutes a significant impact by City of Milpitas standards.

■ **MITIGATION MEASURE:**

No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions. The identified 2030 Without Project possible improvements include the addition of second exclusive northbound and southbound left-turn

lanes, an exclusive westbound right-turn lane, and provision of protected left-turn phasing in the northbound/southbound direction. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. The necessary improvements to mitigate the Project impact at this intersection to an acceptable level consist of the addition of a third westbound through lane on Calaveras. However, the widening of Calaveras Boulevard is not feasible due to right-of-way constraints. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

Milpitas Boulevard and Escuela Drive

(Map location #27)

■ **IMPACT:**

The level of service would be LOS D during the AM peak hour under 2030 Without Project with Improvements conditions, and the intersection would degrade to an unacceptable LOS E under 2030 BART Extension Project conditions. This constitutes a significant impact by City of Milpitas standards.

■ **MITIGATION MEASURE:**

The necessary improvements to mitigate the Project impact at this intersection consist of the addition of an exclusive northbound right-turn lane on Milpitas Boulevard. The implementation of this improvement will improve intersection level of service to an acceptable LOS D during the AM peak hour. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. With the implementation of the above traffic improvement, the Project would result in a less-than-significant impact.

Milpitas Boulevard and Los Coches Street

(Map location #28)

■ IMPACT:

The level of service would be LOS C during the PM peak hour under 2030 Without Project with Improvements conditions, and the intersection would degrade to an unacceptable LOS E under 2030 BART Extension Project conditions. This constitutes a significant impact by City of Milpitas standards.

■ MITIGATION MEASURE:

The necessary improvements to mitigate the Project impact at this intersection consist of the modification of the east and west legs of the intersection (Los Coches Street) to provide two left-turn lanes and one shared through/right-turn lane in the eastbound direction; and one left-turn lane, one through lane, and one right-turn lane in the westbound direction. This improvement will upgrade the intersection level of service to an acceptable LOS D during the PM peak hour.

Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. With the implementation of the above traffic improvement, the Project would result in a less-than-significant impact.

Design Change 23. Berryessa Station. The results of the level of service analysis under 2030 BART Extension Project conditions with the Berryessa Station are shown in Figure 4.2-2. The results show that, measured against applicable level of service standards,⁵ of the 12 signalized study intersections would operate at an unacceptable level under BART Extension Project conditions, as identified below. Note that, of the five signalized intersections projected to operate at unacceptable levels, only three would be adversely impacted by the Project during at least one of the peak hours according to significant impact criteria. The five signalized study intersections operating at an unacceptable level include:

- Flickinger Avenue and Berryessa Road (Impact: AM only) (Map location #2)
- Lundy Avenue and Berryessa Road* (Impact: AM and PM) (Map location #3)
- King Road and Mabury Road (Impact: PM only) (Map location #5)
- Oakland Road and Commercial Street (Map location #9)
- Oakland Road and Brokaw Road* (Map location #10)

All other signalized study intersections would operate at acceptable levels, according to applicable standards.

The intersection impacts and recommended mitigation measures are described below. Intersections for which cost-effective feasible mitigation measures are not possible and intersections where cost-effective feasible mitigation measures do not improve the intersection to acceptable levels are also discussed and identified on Figure 4.2-2:

Flickinger Avenue and Berryessa Road

(Map location #2)

■ IMPACT:

The level of service would be LOS D during the AM peak hour under 2030 Without Project with Improvements conditions, and the intersection would degrade to an unacceptable LOS E under 2030 BART Extension Project conditions. This constitutes a significant impact by City of San Jose standards.

■ MITIGATION MEASURE:

The necessary improvement to mitigate the Project impact at this intersection to an acceptable level consists of the addition of a second eastbound left-turn lane on Berryessa Road. The implementation of this improvement will improve intersection level of service to an acceptable LOS D during the AM peak hour. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. With the implementation of the above traffic improvement, the Project would result in a less-than-significant impact.

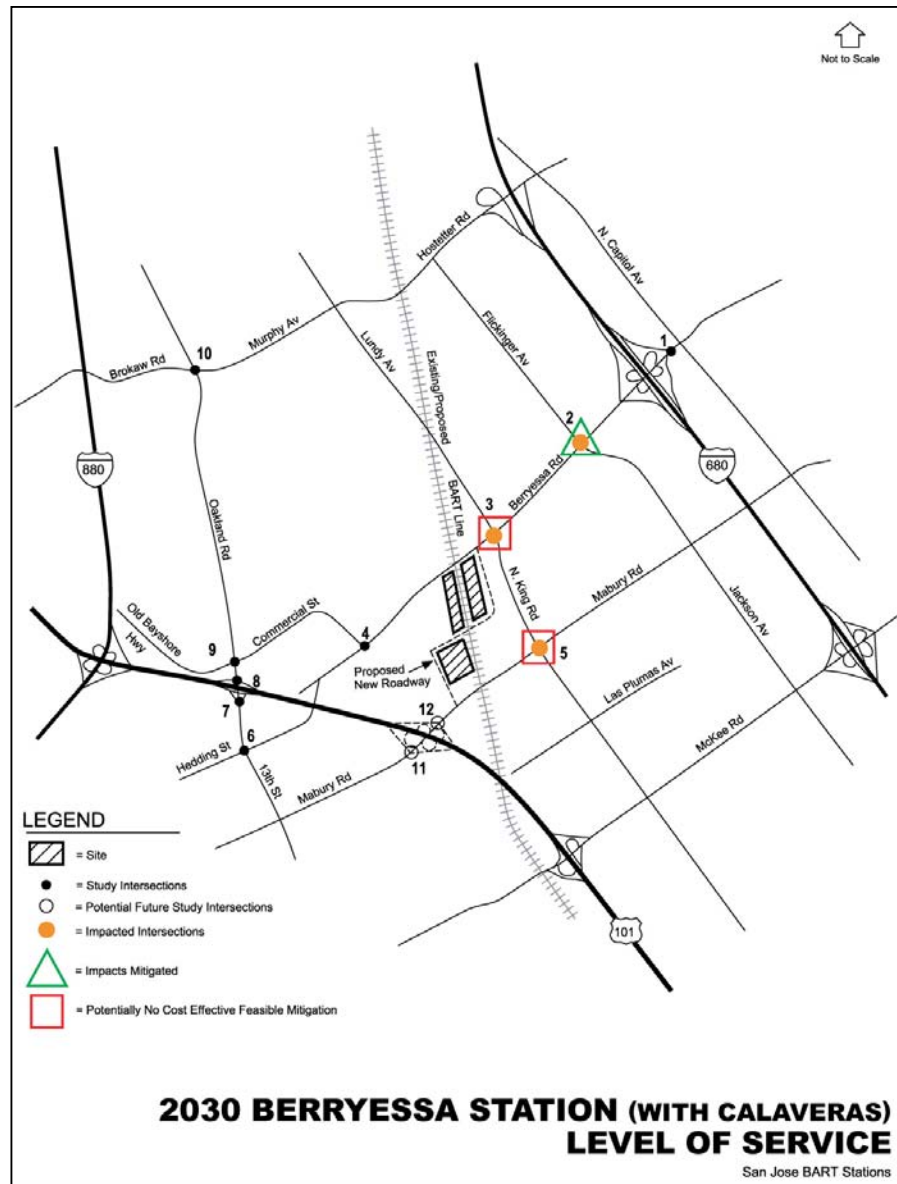


Figure 4.2-2:
2030 Berryessa Station (With Calaveras) Level of Service Conditions

**Lundy Avenue and Berryessa Road*
(No Cost-Effective Feasible Mitigation
Measures) (Map location #3)**

■ IMPACT:

The level of service would be LOS F during both the AM and PM peak hours under 2030 Without Project with Improvements conditions, and the intersection would experience an increase in critical-movement delay of 4 or more seconds and an increase in the V/C of .01 or more under 2030 BART Extension Project conditions. This constitutes a significant impact by CMP standards.

■ MITIGATION MEASURE:

No cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions. The identified 2030 Without Project possible improvements include the addition of second eastbound and westbound left-turn lanes. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. The necessary improvement to mitigate the Project impact at this intersection to an

acceptable level consists of the widening of Lundy Road and Berryessa Road to three and four lanes in each direction, respectively. This improvement is not feasible due to right-of-way constraints along both of these roadways. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

**King Road and Mabury Road
(No Cost-Effective Feasible Mitigation Measures)** (Map location #5)

■ **IMPACT:**

The level of service would be an unacceptable LOS E during the PM peak hour under 2030 Without Project with Improvements conditions, and the intersection would degrade to LOS F under 2030 BART Extension Project conditions. This constitutes a significant impact by City of San Jose standards.

■ **MITIGATION MEASURE:**

No cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions. The identified 2030 Without Project possible improvement includes the addition of a second westbound left-turn lane. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. The necessary improvement to mitigate the Project impact at this intersection to an acceptable level consists of the addition of third southbound, on King Road, and westbound, on Mabury Road, left-turn lanes. However, this improvement would require the widening of both King Road and Mabury Road, which is not feasible due to right-of-way constraints. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

Design Change 33. Alum Rock Station. The results of the level of service analysis under 2030 BART Extension Project conditions with the Alum

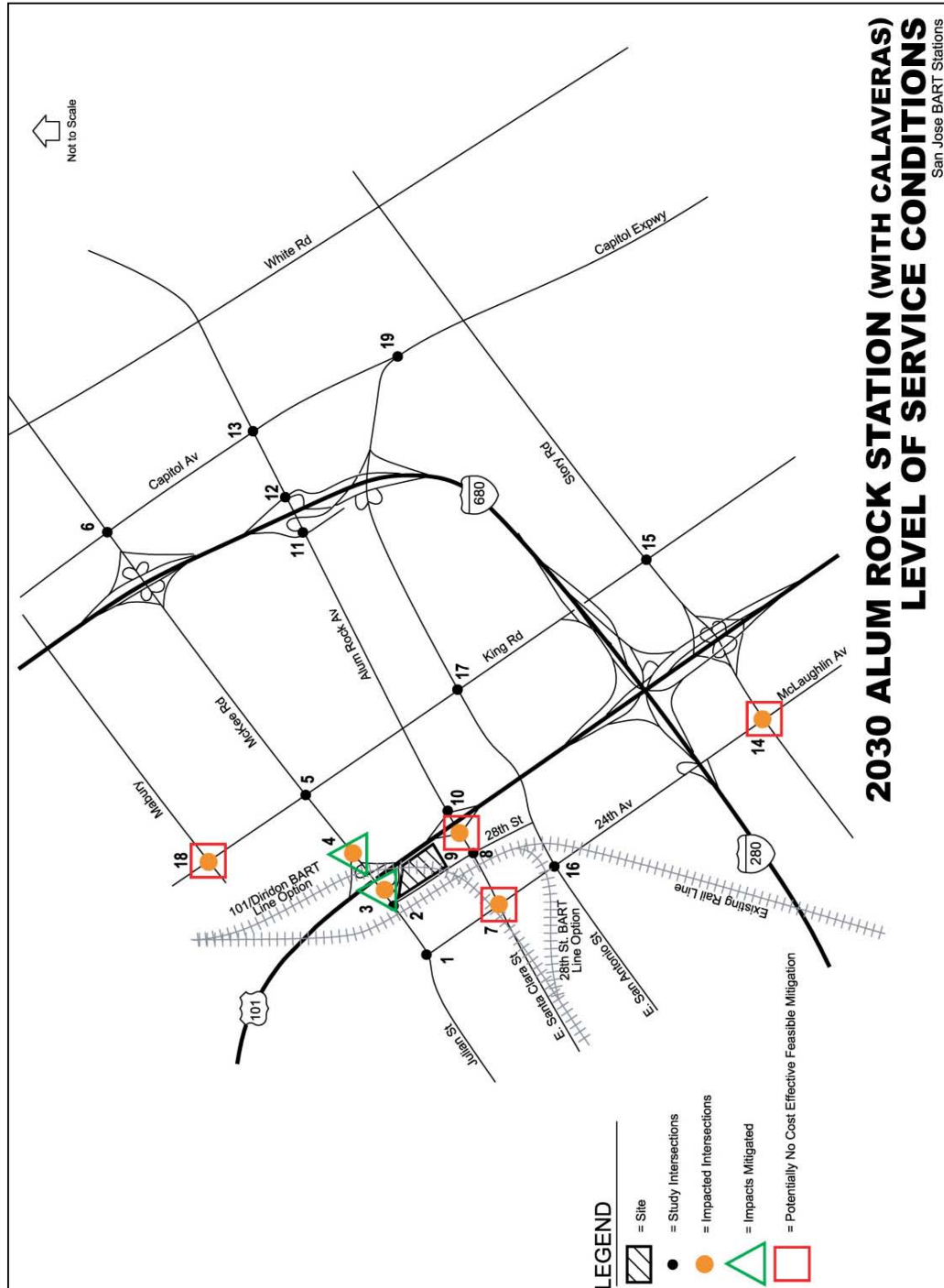
Rock Station are shown in Figure 4.2-3. The results show that, measured against applicable level of service standards, 10 of the 19 signalized study intersections would operate at an unacceptable level under Project conditions, as identified below. Note that, of the ten signalized intersections projected to operate at unacceptable levels, only six would be adversely impacted by the Project during at least one of the peak hours according to the significant impact criteria. The ten signalized study intersections operating at an unacceptable level include:

- ❑ US 101 and Julian Street (Impact: AM only) (Map location #3)
- ❑ US 101 and McKee Road (Impact: AM only) (Map location #4)
- ❑ King Road and McKee Road (Map location #5)
- ❑ Capitol Avenue and McKee Road (Map location #6)
- ❑ 24th Street and Santa Clara Street (Impact: PM only) (Map location #7)
- ❑ US 101 and Santa Clara Street* (Impact: PM only) (Map location #9)
- ❑ McLaughlin Avenue and Story Road (Impact: AM only) (Map location #14)
- ❑ King Road and Story Road (Map location #15)
- ❑ King Road and Mabury Road (Impact: PM only) (Map location #18)
- ❑ Capitol Expressway and Capitol Avenue* (Map location #19)

All other signalized study intersections would operate at acceptable levels, according to applicable standards.

The intersection impacts and recommended mitigation measures are described below. Intersections for which cost-effective feasible mitigation measures are not possible and intersections where cost-effective feasible mitigation measures do not improve the intersection to acceptable levels are also discussed and identified in Figure 4.2-3.

see Figure 4.2-3 >>



**2030 ALUM ROCK STATION (WITH CALAVERAS)
LEVEL OF SERVICE CONDITIONS**
San Jose BART Stations

Figure 4.2-3: 2030 Alum Rock Station (with Calaveras) Intersection Level of Service Conditions

US 101 and Julian Street (Map location #3)

■ IMPACT:

The level of service would be LOS D during the AM peak hour under 2030 Without Project with Improvements conditions, and the intersection would degrade to an unacceptable LOS E under 2030 BART Extension Project conditions. This constitutes a significant impact by City of San Jose standards.

■ MITIGATION MEASURE:

The necessary improvement to mitigate the Project impact at this intersection to an acceptable level consists of the addition of an exclusive eastbound right-turn lane on Julian Street. The implementation of this improvement would improve intersection level of service to an acceptable LOS C. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. With the implementation of the above traffic improvement, the Project would result in a less-than-significant impact.

US 101 and McKee Road (Map location #4)

■ IMPACT:

The level of service would be LOS D during the AM peak hour under 2030 Without Project with Improvements conditions, and the intersection would degrade to an unacceptable LOS E under 2030 BART Extension Project conditions. This constitutes a significant impact by City of San Jose standards.

■ MITIGATION MEASURE:

The necessary improvement to mitigate the Project impact at this intersection to an acceptable level consists of the conversion of the northbound shared right and through lane on the US 101 off-ramp to an all-movement lane. The implementation of this improvement would improve intersection level of service to an acceptable LOS D. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. With the implementation of the above

traffic improvement, the Project would result in a less-than-significant impact.

24th Street and Santa Clara Street (No Cost-Effective Feasible Mitigation Measures)

(Map location #7)

■ IMPACT:

The level of service would be an unacceptable LOS E during the PM peak hour under 2030 Without Project with Improvements conditions, and the intersection would degrade to LOS F under 2030 BART Extension Project conditions. This constitutes a significant impact by City of San Jose standards.

■ MITIGATION MEASURE:

As identified under the 2030 Without Project conditions, no cost-effective feasible improvements can be made at this intersection to mitigate Without Project or Project impacts. The necessary improvements to mitigate the impacts at this intersection to an acceptable level consist of the widening of 24th Street to provide two through lanes and an exclusive left-turn lane in each direction, in addition to providing protected left-turn phasing on the same approaches. However, these improvements would require reconstruction of the intersection and widening of 24th Street to two lanes in each direction, which is not feasible due to right-of-way constraints. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

US 101 and Santa Clara Street* **(No Cost-Effective Feasible Mitigation Measures)** (Map location #9)

■ IMPACT:

The level of service would be LOS E during the PM peak hour under 2030 Without Project with Improvements conditions, and the intersection would degrade to LOS F under 2030 BART Extension Project conditions. This constitutes a significant impact by CMP standards.

■ **MITIGATION MEASURE:**

The necessary improvement to mitigate the Project impact at this intersection to an acceptable level consists of the conversion of the eastbound right-turn lane on Santa Clara Street to a free-right-turn lane. The unacceptable level of service condition at this intersection is due to the significantly high eastbound traffic volume accessing the US 101 southbound on-ramp. However, the addition of a free-right-turn lane would not be feasible due to its inability to operate as a free-right-turn movement with the ramp metering in operation. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

**McLaughlin Avenue and Story Road
(No Cost-Effective Feasible Mitigation Measures)** (Map location #14)

■ **IMPACT:**

The level of service would be an unacceptable LOS E under 2030 Without Project with Improvements conditions, and the intersection would experience an increase in critical-movement delay of 4 or more seconds and an increase in the V/C of .01 or more during the AM peak hour under 2030 BART Extension Project conditions. This constitutes a significant impact by City of San Jose standards.

■ **MITIGATION MEASURE:**

No cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions. The identified 2030 Without Project possible improvements include the addition of second northbound and southbound left-turn lanes and an exclusive eastbound right-turn lane. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. The necessary improvement to mitigate the Project impact at this intersection to an acceptable level consists of the widening of McLaughlin Avenue to three lanes in each direction. This improvement would require the removal of

various businesses and homes along McLaughlin Avenue to widen McLaughlin Avenue to the required three lanes in each direction. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

**King Road and Mabury Road
(No Cost-Effective Feasible Mitigation Measures)** (Map location #18)

■ **IMPACT:**

The level of service would be an unacceptable LOS E during the PM peak hour under 2030 Without Project with Improvements conditions, and the intersection would degrade to LOS F under 2030 BART Extension Project conditions. This constitutes a significant impact by City of San Jose standards.

■ **MITIGATION MEASURE:**

No cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions. The identified 2030 Without Project possible improvement includes the addition of second westbound left-turn lane. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. The necessary improvements to mitigate the Project impact at this intersection to an acceptable level consist of the addition a third southbound left-turn lane, a third eastbound through lane, and a second eastbound right-turn lane. These improvements would require the widening of Mabury Road, which is not feasible due to right-of-way constraints. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

Design Change 42. Diridon/Arena Station and Alignment (Parking Structure Option). The results of the level of service analysis under 2030 BART Extension Project conditions with the Diridon/Arena Station are shown in Figure 4.2-4. The results show that, measured against applicable level of service standards, 13 of the 34 signalized study intersections

would operate at an unacceptable level under Project conditions. Note that, of the 13 signalized intersections projected to operate at unacceptable levels, only 3 would be adversely impacted by the Project during at least one of the peak hours according to significant impact criteria. The 13 signalized study intersections operating at an unacceptable level include:

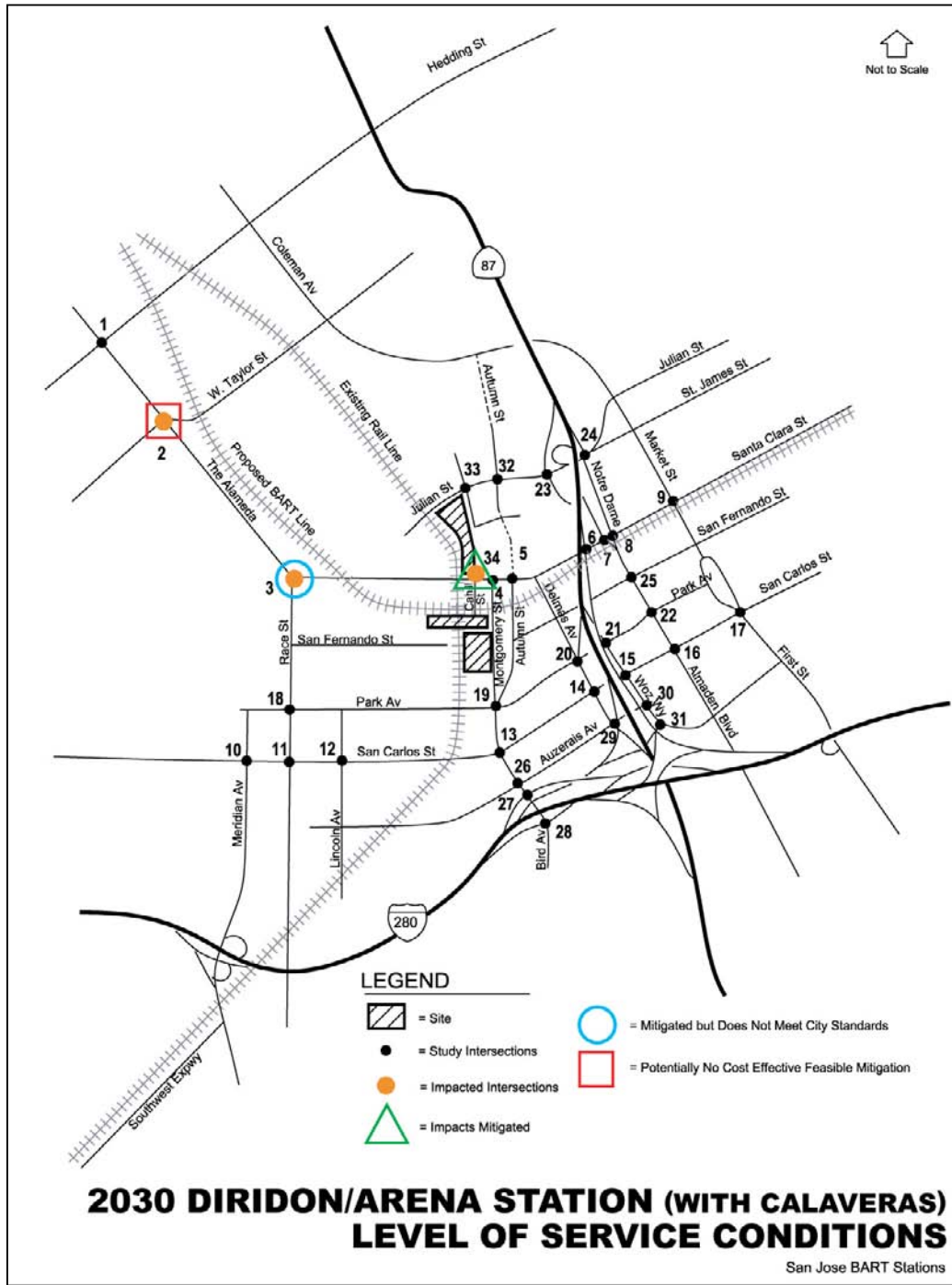


Figure 4.2-4:
2030 Diridon/Arena Station (with Calaveras) Intersection Level of Service Conditions

- ❑ The Alameda and Hedding Street*
(Map location #1)
- ❑ The Alameda and Taylor Street/Naglee Avenue* (Impact: AM and PM)
(Map location #2)
- ❑ Race Street and The Alameda*
(Impact: PM only) (Map location #3)
- ❑ Notre Dame Street and Santa Clara Street
(Map location #8)
- ❑ Market Street and Santa Clara Street
(Map location #9)
- ❑ Meridian Avenue and San Carlos Street
(Map location #10)
- ❑ Woz Way and San Carlos Street
(Map location #15)
- ❑ Almaden Boulevard and San Carlos Street*
(Map location #16)
- ❑ Market Street and San Carlos Street*
(Map location #17)
- ❑ Almaden Boulevard and Park Avenue
(Map location #22)
- ❑ Almaden Boulevard and San Fernando Street
(Map location #25)
- ❑ Autumn Street and Julian Street
(Map location #32)
- ❑ Cahill Street and Santa Clara Street (Impact: AM and PM) (Map location #34)

All other signalized study intersections would operate at acceptable levels, according to applicable standards.

The intersection impacts and recommended mitigation measures are described below. Intersections for which cost-effective feasible mitigation measures are not possible and intersections where cost-effective feasible mitigation measures do not improve the intersection to acceptable levels are also discussed and identified on Figure 4.2-4. Design Change 42. Diridon/Arena Station and Alignment (No Parking Option) is also discussed below.

The Alameda and Taylor Street/Naglee Avenue* (No Cost-Effective Feasible Mitigation Measures) (Map location #2)

■ IMPACT:

The level of service would be LOS F under 2030 Without Project with Improvements conditions, and the intersection would experience an increase in critical-movement delay of 4 or more seconds and an increase in the V/C of .01 or more during both the AM and PM peak hours under 2030 BART Extension Project conditions. This constitutes a significant impact by CMP standards.

■ MITIGATION MEASURE:

No cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions. The identified 2030 Without Project possible improvements include the addition of second eastbound left-turn lane and an exclusive westbound right-turn lane. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. The necessary improvement consists of the widening of The Alameda to provide three through lanes and two left-turn lanes in each direction. However, the widening of The Alameda to this extent is not feasible due to right-of-way constraints. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

Race Street and The Alameda* (Map location #3)

■ IMPACT:

The level of service would be LOS E and F during the AM and PM peak hours, respectively, under 2030 Without Project with Improvements conditions. The intersection would degrade to an unacceptable LOS F during the AM peak hour, and the intersection would experience an increase in critical-movement delay of 4 or more seconds and an increase in the V/C of .01 or more during the PM peak hour under 2030

BART Extension Project conditions. This constitutes a significant impact by CMP standards.

■ **MITIGATION MEASURE:**

The identified 2030 Without Project possible improvement includes the addition of second westbound left-turn lane. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of these traffic improvements. With the Project traffic, a possible improvement includes the addition of an exclusive northbound right-turn lane. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. Although intersection operations would improve to an acceptable LOS E during the AM peak hour with this improvement, the level of service would remain at an unacceptable LOS F during the PM peak hour for both the Without Project and Project. The unacceptable level of service condition at this intersection is due to the significantly high non-Project related eastbound right-turn movement volume. The necessary improvement to improve intersection operations to acceptable levels consists of the addition of a fourth eastbound lane on The Alameda. However, this improvement would require the widening of The Alameda and Race Street, which is not feasible due to right-of-way constraints and not required to mitigate Project related traffic impacts. With the implementation of the above traffic improvement, the Project would result in a less-than-significant impact.

Cahill Street and Santa Clara Street

(Map location #34)

■ **IMPACT:**

The level of service would be LOS C under 2030 Without Project with Improvements conditions, and the intersection would degrade to an unacceptable LOS F during both the AM and PM peak hours under 2030 BART Extension Project conditions. This constitutes a significant impact by City of San Jose standards.

■ **MITIGATION MEASURE:**

The necessary improvements to mitigate the Project impact at this intersection to an acceptable level consist of the addition of a second northbound left-turn lane on Cahill Street, and the addition of an exclusive left-turn and right-turn lane on the eastbound approach on Santa Clara Street. The implementation of these improvements will improve intersection level of service to an acceptable LOS C and D during the AM and PM peak hours, respectively. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. With the implementation of the above traffic improvement, the Project would result in a less-than-significant impact.

Design Change 42. Diridon/Arena Station and Alignment (No Parking Option).

The No Parking Option would not provide any parking at this location. The No Parking Option traffic model projections indicate that with the elimination of the parking structure at the Diridon/Arena Station, the majority of the PNR traffic projected to use the Diridon/Arena Station would use the Santa Clara Station as alternate access. LOS conditions were evaluated at the study intersections in the vicinity of the Diridon/Arena Station under 2030 6-Station conditions without parking at the Diridon/Arena Station. The LOS results were then compared to the 6-Station condition with parking provided at the Diridon/Arena Station. The results of the LOS analyses, indicate that the LOS would be the similar at all of the study intersections, with the exception of the three intersections discussed below. The study freeway segments for the Diridon/Arena Station were also analyzed based on the No Parking Option. The results of the analysis indicate that the No Parking Option would not add traffic representing one percent or more of the freeway’s capacity to any of the study freeway segments. Therefore, none of the freeway segments analyzed in the vicinity of the Diridon/Arena Station would be impacted by the No Parking Option (Hexagon, October 2006).

The Alameda and Taylor Street/Naglee Avenue* (No Cost-Effective Feasible Mitigation Measures) (Map location #2)

■ IMPACT:

This intersection was projected to be impacted during both the AM and PM peak hours with the Parking Structure Option at the Diridon/Arena Station. However, with the elimination of the parking structure at the Diridon/Arena Station, this intersection would only be impacted during the PM peak hour.

■ MITIGATION MEASURE:

There are no cost effective feasible improvements that can be made to mitigate Project impacts at this intersection. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

Autumn Street and Julian Street

(Map location #32)

■ IMPACT:

This intersection would not be impacted by the Parking Structure Option at the Diridon/Arena Station. However, with the No Parking Option at the Diridon/Arena Station, this intersection would be impacted. The LOS would be an unacceptable LOS E during the PM peak hour under 2030 Without Project with Improvements conditions and the intersection would experience an increase in critical-movement delay of four or more seconds and an increase in the demand-to-capacity ratio (V/C) of .01 or more under the No Parking Option. This constitutes a significant impact by City of San Jose standards. The impact at this intersection would be a direct result of the shift in PNR traffic from the Diridon/Arena Station to the Santa Clara Station. Traffic projections show station traffic accessing the Santa Clara Station via this intersection.

■ MITIGATION MEASURE:

Mitigation will include adding a third eastbound through lane to reduce impacts. Because the Project would contribute to traffic congestion at this

intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. With the implementation of the above traffic improvement, the Project would result in a less-than-significant impact.

Cahill Street and Santa Clara Street

(Map location #34)

■ IMPACT:

This intersection was projected to be impacted during both the AM and PM peak hours with the Parking Structure Option at the Diridon/Arena Station. The LOS analysis shows that this intersection would continue to be impacted by the Project during both peak hours with the No Parking Option at the Diridon/Arena Station. However, the magnitude of this impact would be less with the No Parking Option than with the Parking Structure Option at the Diridon/Arena Station. With the Parking Structure Option, the level of service at this intersection would go from a LOS C under the year 2030 Without Project conditions to an unacceptable LOS F during both peak hours with the Project. However, the LOS at this intersection with the No Parking Option would deteriorate to an unacceptable LOS E and F during the AM and PM peak hours, respectively. Therefore, the increase in critical delay at the intersection would be less with the No Parking Option at the Diridon/Arena Station. This is a direct result of the decrease in station traffic accessing the Diridon/Arena Station via this intersection.

■ MITIGATION MEASURE:

The necessary mitigation measures to mitigate the Project impact at this intersection include the addition of a second northbound left-turn lane and the addition of an exclusive left-turn and right-turn lane on the eastbound approach. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. With the implementation of the above traffic improvement, the Project would result in a less-than-significant impact.

Design Change 52. Santa Clara Station (With Parking Structure Option at Diridon/Arena Station). The results of the level of service analysis under 2030 BART Extension Project conditions with the Santa Clara Station are presented in Figure 4.2-5. The results show that, measured against applicable level of service standards, 14 of the 23 signalized study intersections would operate at an unacceptable level under Project conditions, as identified below. Note that, of the 14 signalized intersections projected to operate at unacceptable levels, only 6 would be adversely impacted by the Project during at least one of the peak hours according to the significant impact criteria. The 14 signalized study intersections operating at an unacceptable level include:

- ❑ San Tomas Expressway and El Camino Real* (Impact: PM only) (Map location #1)
- ❑ Lafayette Street and Walsh Avenue (Map location #7)
- ❑ Lafayette Street and Martin Avenue (Map location #8)
- ❑ Lafayette Street and Benton Street (Impact: PM only) (Map location #10)
- ❑ Coleman Avenue and Brokaw Road (Impact: PM only) (Map location #12)
- ❑ De La Cruz Boulevard and Central Expressway* (Impact: PM only) (Map location #15)
- ❑ San Tomas Expressway and Benton Street (Map location #16)
- ❑ Lincoln Street and Benton Street (Map location #17)
- ❑ Monroe Street and Benton Street (Impact: AM and PM) (Map location #18)
- ❑ San Tomas Expressway and Homestead Road* (Map location #19)
- ❑ Monroe Street and Homestead Road (Map location #20)
- ❑ San Tomas Expressway and Monroe Street* (Map location #21)
- ❑ De La Cruz Boulevard and Reed Street (Map location #22)
- ❑ De La Cruz Boulevard and Martin Avenue (Impact: PM only) (Map location #23)

All other signalized study intersections would operate at acceptable levels, according to applicable standards.

The intersection impacts and recommended mitigation measures are described below. Intersections for which cost-effective feasible mitigation measures are not possible and intersections where cost-effective feasible mitigation measures do not improve the intersection to acceptable levels are also discussed and identified on Figure 4.2-5. Design Change 42. Diridon/Arena Station and Alignment (No Parking Option) is also discussed below.

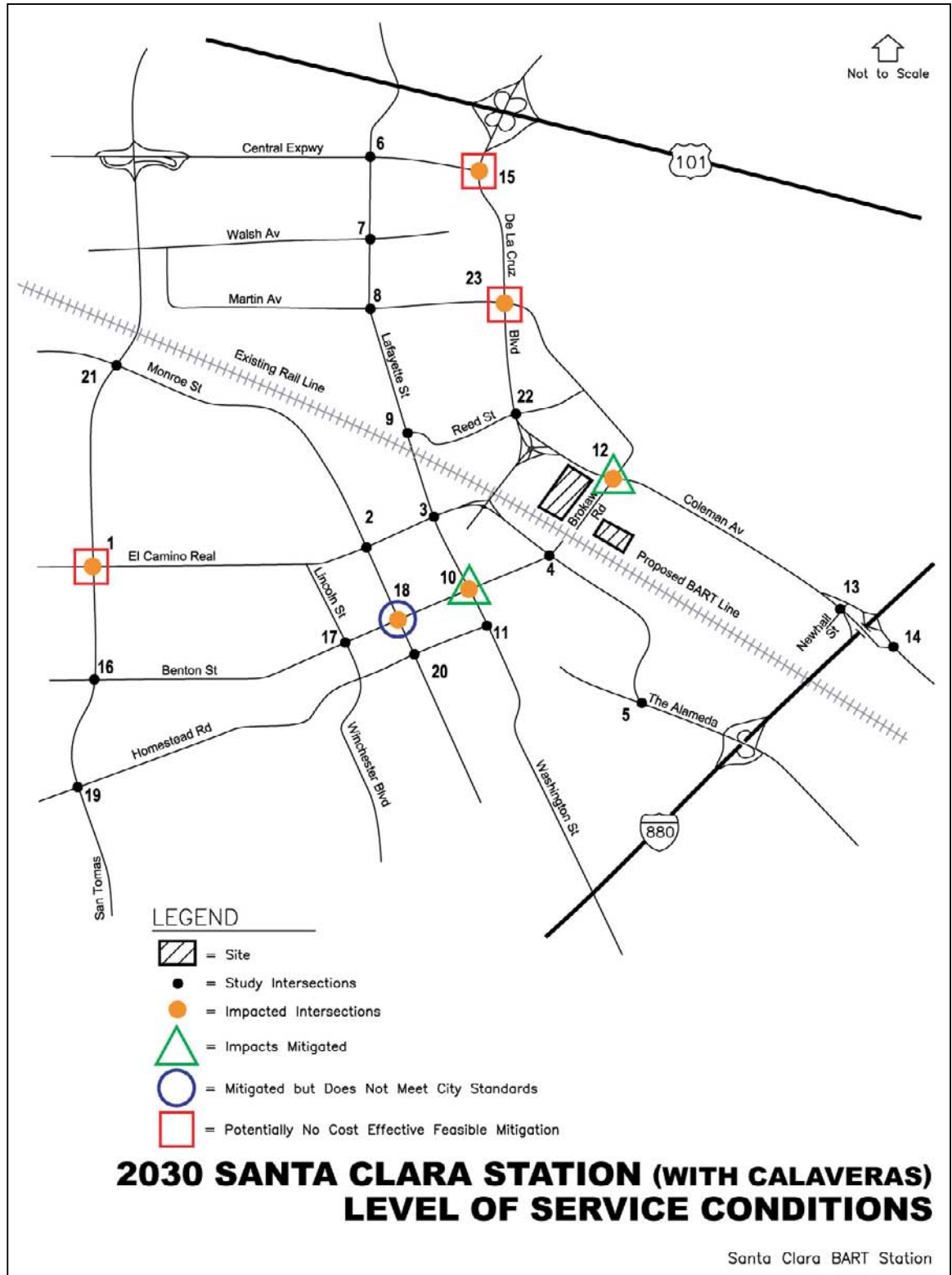
San Tomas Expressway and El Camino Real* (No Cost-Effective Feasible Mitigation Measure) (Map location #1)

■ IMPACT:

The level of service would be an unacceptable LOS F under 2030 Without Project with Improvements conditions, and the intersection would experience an increase in critical-movement delay of 4 or more seconds and an increase in the V/C of .01 or more during the PM peak hour under 2030 BART Extension Project conditions. This constitutes a significant impact by CMP standards.

■ MITIGATION MEASURE:

No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions. The identified 2030 Without Project possible improvements include the addition of second left-turn lanes on all approaches. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. The necessary improvement to improve intersection operations to acceptable levels would require grade separation of the intersection. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.



**Figure 4.2-5:
2030 Santa Clara Station (With Calaveras) Level of Service Conditions**

Lafayette Street and Benton Street

(Map location #10)

■ IMPACT:

The level of service would be an acceptable LOS D during the PM peak hour under 2030 Without Project with Improvements conditions, and the intersection would degrade to an unacceptable LOS E under 2030 BART Extension Project conditions. This constitutes a significant impact by City of Santa Clara standards.

■ MITIGATION MEASURE:

The identified 2030 Without Project possible improvements include the addition of an exclusive left-turn lane on the northbound direction, second through lanes on the northbound and southbound approaches, addition of an exclusive eastbound right-turn lane, and providing protected left-turn phasing on all approaches to the intersection. While these improvements would upgrade operations to acceptable levels, they may not be feasible due to right-of-way constraints and the current reversible lane on Lafayette Street. The necessary improvement, to mitigate the Project impact at this intersection beyond the Without Project condition, consists of the addition of an exclusive southbound right-turn lane on Lafayette Street. The implementation of this improvement would improve intersection level of service to an acceptable LOS D. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of these traffic improvements. With the implementation of the above traffic improvement, the Project would result in a less-than-significant impact.

Coleman Avenue and Brokaw Road

(Map location #12)

■ IMPACT:

The level of service would be an acceptable LOS D during the PM peak hour under 2030 Without Project with Improvements conditions, and the intersection would degrade to an unacceptable LOS F under 2030 BART Extension Project conditions. This constitutes a significant impact by City of Santa Clara standards.

■ MITIGATION MEASURE:

The identified 2030 Without Project necessary improvement includes the addition of third southbound through lane. The necessary improvement to mitigate the Project impact at this intersection consists of the addition of a second eastbound left-turn lane on Brokaw Road. The implementation of this improvement would improve intersection level of service to an acceptable LOS D. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of both of these traffic improvements. With the implementation of the above traffic improvement, the Project would result in a less-than-significant impact.

De La Cruz Boulevard and Central Expressway* (No Cost-Effective Feasible Mitigation Measure) (Map location #15)

■ IMPACT:

The level of service would be LOS F under 2030 Without Project with Improvements conditions, and the intersection would experience an increase in critical-movement delay of 4 or more seconds and an increase in the V/C ratio of .01 or more during the PM peak hour under 2030 BART Extension Project conditions. This constitutes a significant impact by CMP standards.

■ MITIGATION MEASURE:

The identified 2030 Without Project possible improvements include the addition of a third eastbound left-turn lane and a second eastbound right-turn lane. While these improvements would upgrade operations to acceptable levels, they may not be feasible due to right-of-way constraints on Central Expressway. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of these traffic improvements. No cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions to mitigate Project impacts. The necessary improvement to mitigate

the Project impact at this intersection consists of the addition of third northbound left-turn lane, a third southbound through lane, and a free southbound right-turn lane, on De La Cruz Boulevard. However, these improvements would require the widening of both De La Cruz Boulevard and Central Expressway, which is not feasible due to right-of-way constraints. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

Monroe Street and Benton Street

(Map location #18)

■ IMPACT:

The level of service would be an unacceptable LOS E and F during the AM and the PM peak hour, respectively, under 2030 Without Project with Improvements conditions, and the intersection would degrade to LOS F during the AM peak hour and experience an increase in critical-movement delay of 4 or more seconds and an increase in the V/C of .01 or more during the PM peak hour under 2030 BART Extension Project conditions. This constitutes a significant impact by City of Santa Clara standards.

■ MITIGATION MEASURE:

Possible improvements include the addition of exclusive northbound and southbound right-turn lanes on Monroe Street. This improvement may be challenging due to right-of-way constraints along Monroe Street, but it is included as possible improvement. Although intersection operation levels will improve with the implementation of these improvements to conditions better than Without Project, the intersection level of service would remain at an unacceptable LOS F during the PM peak hour. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of these traffic improvements. With the implementation of the above traffic improvement, the Project would result in a less-than-significant impact.

De La Cruz Boulevard and Martin Avenue (No Cost-Effective Feasible Mitigation Measure) (Map location #23)

■ IMPACT:

The level of service would be an unacceptable LOS E during the PM peak hour under 2030 Without Project with Improvements conditions, and the intersection would experience an increase in critical-movement delay of 4 or more seconds and an increase in the V/C of .01 or more under 2030 BART Extension Project conditions. This constitutes a significant impact by City of Santa Clara standards.

■ MITIGATION MEASURE:

No cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions. The identified 2030 Without Project possible improvements include the addition of a second northbound and eastbound left-turn lanes and the addition of exclusive southbound and westbound right-turn lanes. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of these traffic improvements. Right-of-way constraints along De La Cruz Boulevard prohibit the widening of De La Cruz Boulevard to the necessary four lanes in the southbound direction to mitigate Project impacts. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

Design Change 52. Santa Clara Station (No Parking Option at Diridon/Arena Station). The No Parking Option at the Diridon/Arena Station would result in additional parking demand at the closest accessible station. The Santa Clara Station is the most likely choice of those transit riders who would have used the Diridon/Arena Station parking garage.

The No Parking Option traffic model projections indicate that, with the elimination of the parking structure at the Diridon/Arena Station, the majority of the PNR traffic projected to use the Diridon/Arena Station would use the Santa Clara Station as alternate

access. Since the only PNR traffic access to the Santa Clara Station is provided directly by Coleman Avenue, the majority of the displaced PNR traffic from the Diridon/Arena Station to the Santa Clara Station would use Coleman Avenue. LOS conditions were evaluated at the study intersections in the vicinity of the Santa Clara Station under 2030 6-Station conditions without parking at the Diridon/Arena Station. The LOS results were compared to the 6-Station condition with parking provided at the Santa Clara Station. The results of the LOS analyses indicate that the LOS would be similar at all of the study intersections, with the exception of the Coleman Avenue and Brokaw Road intersection (Hexagon, October 2006).

Coleman Avenue and Brokaw Road

(Map location #12).

■ IMPACT:

This intersection would degrade from an LOS D under the year 2030 Without Project conditions to an unacceptable LOS F during the PM peak hour with the Parking Structure Option at the Diridon/Arena Station. With the No Parking Option at the Diridon/Arena Station, this intersection would continue to degrade (the intersection would experience a greater increase in critical delay).

■ MITIGATION MEASURE:

The necessary improvement to mitigate the Project impact at this intersection consists of the addition of a second eastbound left-turn lane. With implementation of this improvement, the intersection

level of service would improve to an acceptable LOS D, assuming the Parking Structure Option at the Diridon/Arena Station. With the No Parking Option, the proposed mitigation for this intersection would not be sufficient to mitigate the Project impact. The intersection of Coleman/Brokaw would continue to operate at an unacceptable LOS E with the implementation of the proposed second eastbound left-turn lane. The additional improvement needed to mitigate the No Parking Option Project impact at this intersection consists of the addition of an exclusive eastbound right-turn lane. With the addition of an exclusive right-turn lane, the intersection level of service would improve to LOS D. In addition, although the AM peak hour is not projected to be impacted by the Project, a significant amount of northbound left-turn movement traffic would be added to this intersection during the AM peak hour. Therefore, a second northbound left-turn lane would be needed at this intersection. This will help serve station traffic more efficiently and avoid lengthy vehicle queues for this movement. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of these traffic improvements. With the implementation of the above traffic improvement, the Project would result in a less-than-significant impact.

CONCLUSION

No significant unavoidable transit, pedestrian, bicycle, or parking impacts would result from the Project. However, significant unavoidable vehicular traffic impacts would occur at 19 intersections and 4 freeway segments. The FEIR identified significant unavoidable impacts at 17 intersections and no significant impacts to any freeway segments. The main reasons for the differences were a revised traffic model with new trip generation rates at stations, new traffic counts, and new/revised traffic assignment procedures. The 19 intersections resulting in significant unavoidable vehicular traffic impacts (of which, 4 were identified as significant unavoidable impacts in the FEIR and the remaining 15 intersections are new to the SEIR) are listed below:

Freeways

Design Change 52. Santa Clara Station (No Parking Structure Option at Diridon/Arena Station).

The four impacted freeway segments are:

- ❑ I-880, Bascom Avenue to The Alameda (northbound AM peak hour)
- ❑ I-880, The Alameda to Coleman Avenue (northbound AM peak hour)
- ❑ I-880, Coleman Avenue to The Alameda (southbound PM peak hour)
- ❑ I-880, The Alameda to Bascom Avenue (southbound PM peak hour)

Intersections

Design Change 17. Montague/Capitol Station (with the South Calaveras Future Station).

- ❑ Great Mall Parkway and Montague Expressway* (Impact AM and PM)
- ❑ Milpitas Boulevard and Yosemite Drive (Impact AM only)
- ❑ Milpitas Boulevard and Montague Expressway* (Impact PM only) – FEIR also identified as significant unavoidable impact at this intersection
- ❑ Dempsey Road and Landess Avenue (Impact AM only) – FEIR also identified as significant unavoidable impact at this intersection
- ❑ Park Victoria Drive and Landess Avenue (Impact AM and PM)
- ❑ Old Oakland/Main Street and Montague Expressway* (Impact AM only)
- ❑ Milpitas Boulevard and Calaveras Boulevard* (Impact AM and PM) – FEIR also identified as significant unavoidable impact at this intersection
- ❑ Hillview Drive and Calaveras Boulevard (Impact PM only)
- ❑ Park Victoria Drive and Calaveras Boulevard (Impact AM only)

Design Change 23. Berryessa Station.

- ❑ Lundy Avenue and Berryessa Road* (Impact AM and PM)
- ❑ King Road and Mabury Road (Impact PM only)

Design Change 33. Alum Rock Station

- ❑ 24th Street and Santa Clara Street (Impact PM only)
- ❑ US 101 and Santa Clara Street* (Impact PM only)
- ❑ McLaughlin Avenue and Story Road (Impact AM only)
- ❑ King Road and Mabury Road (Impact PM only)

Design Change 42. Diridon/Arena Station. (Both Parking Structure and No Parking Options)

- ❑ The Alameda and Taylor Street/Naglee Avenue* (Impact AM and PM)

Design Change 52. Santa Clara Station. (Both Parking Structure and No Parking Options at Diridon/Arena Station).

- ❑ San Tomas Expressway and El Camino Real* (Impact PM only) – FEIR also identified as significant unavoidable impact at this intersection
- ❑ De La Cruz Boulevard and Central Expressway* (Impact PM only)
- ❑ De La Cruz Boulevard and Martin Avenue (Impact PM only)

The FEIR identified 17 intersections with significant unavoidable impacts. The 13 remaining intersections identified in the FEIR that will no longer result in significant unavoidable impacts are listed below:

SOUTH CALAVERAS FUTURE STATION

- ❑ Calaveras Boulevard and Abel Street
- ❑ Milpitas Boulevard and Jacklin Street
- ❑ Milpitas Boulevard and Montague Expressway

MONTAGUE/CAPITOL STATION

- ❑ Great Mall Parkway and Abel Street

BERRYESSA STATION

- ❑ Oakland Road and Brokaw Road

ALUM ROCK STATION

- ❑ McKee Road and King Road

DIRIDON/ARENA STATION

- ❑ San Carlos Street and Almaden Boulevard
- ❑ San Carlos Street and Market Street
- ❑ Park Avenue and Race Street
- ❑ Auzerais Avenue and Delmas Avenue

SANTA CLARA STATION

- ❑ Lafayette Street and Central Expressway
- ❑ Homestead Road and Munroe Street
- ❑ Monroe Street San Tomas Expressway