4.2 TRANSPORTATION AND TRANSIT

4.2.1 INTRODUCTION

This section discusses existing and future transportation conditions in the SVRTC and quantifies the expected long-term transportation impacts of the No-Action, Baseline, and BART alternatives. 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 corridor. Traffic operations under each of the project alternatives during the peak hour are evaluated, with emphasis on intersection level of service, and measures are identified for mitigating adverse impacts of the Baseline and BART alternatives on the roadway network. Short-term construction-phase impacts are discussed in Section 4.19*, 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 Baseline and BART alternatives are described in the *Travel Demand Modeling Methodology Report*, *Travel Demand Forecasts Report*, and three traffic impact analysis reports addressing the station areas in the cities of Milpitas, San Jose, and Santa Clara (Hexagon Transportation Consultants, Inc., 2003)[1]. These reports form the basis for much of the information in this section.

4.2.2 REGULATORY SETTING

4.2.2.1 Alameda County Congestion Management Agency Level of Service Policies

The Alameda County Congestion Management Agency (ACCMA) Land Use Analysis Program requires a level of service analysis for roadway segments within a study area if 100 evening peak hour vehicle trips are generated by a proposed project (see Section 4.2.6.2 for definitions of level of service). ACCMA's level of service standard is LOS E, except where LOS F was the level of service originally measured, in which case the standard remains LOS F.

4.2.2.2 City of Fremont Level of Service Policies

The City of Fremont Level of Service policy states:

> Maintain a Level of Service "D" (LOS D) with a target volume-to-capacity ratio (V/C) of 0.85 at major intersections, except where the achievement of such level of service can be demonstrated to conflict with environmental, historic, or aesthetic objectives or where regional traffic is a significant cause of congestion or where substantial transportation improvements have been required and further mitigation is not feasible because of identified constraints.

4.2.2.3 Santa Clara Valley Transportation Authority Level of Service Policies

As the Congestion Management Agency of Santa Clara County, VTA requires a Transportation Impact Analysis if 100 or more peak hour vehicle trips are generated by a proposed project. VTA's level of service goal for CMP facilities in the county is LOS D, although member agencies (Santa Clara County and all cities with in the county) are not required to conform to this goal. However, they are required to meet the CMP traffic level of service standard of LOS E. Where LOS F was the level of service originally

[1] Hexagon Transportation Consultants, Inc., *Milpitas BART Stations, Traffic Impact Analysis*, 2003; *San Jose BART Stations, Traffic Impact Analysis*, 2003; *Santa Clara BART Station, Traffic Impact Analysis*, 2003.

measured, traffic conditions may not increase by more than the CMP traffic level of service thresholds, which are as follows:

- Urban arterials (intersection): The addition of project traffic increases the average stopped delay for the critical movements by four seconds or more ***and*** increase critical V/C by 0.01 or more. The exception to this threshold is when the addition of project traffic reduces the amount of average stopped delay for critical movements (i.e. the change is average stopped delay for critical movements is negative). In this case, the threshold is when the project increases the critical V/C value by 0.01 or more.
- Freeway: The number of vehicle trips added is more than 1 percent of the freeway capacity.

Development projects that affect CMP system facilities operating below the CMP standard are required to mitigate their traffic impacts or to implement deficiency plan actions commensurate with their impacts.

4.2.2.4 City of Milpitas Level of Service Policies

The General Plan of the City of Milpitas states that the level of service goal for the CMP system is LOS D.

4.2.2.5 City of San Jose Level of Service Policies

The General Plan of the City of San Jose states that the minimum overall performance of city streets during peak travel periods should be LOS D.

4.2.2.6 City of Santa Clara Level of Service Policies

The level of service policy of the City of Santa Clara is LOS D.

4.2.3 TRANSIT

4.2.3.1 Existing System

Rail and Bus Services

VTA currently operates 56 local bus routes, 6 limited stop bus routes, 11 express bus routes, 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 506 buses and 51 light rail vehicles, including spare vehicles. Table 3.2-1 in Chapter 3, *Alternatives*, includes a summary of VTA's bus and LRT services.

VTA's LRT service in the corridor includes I-880/Milpitas LRT station on the Tasman West LRT line located on Tasman Drive, west of I-880. The Capitol LRT line is currently under construction with an expected completion date of 2004. The Capitol LRT line will extend the Tasman West line south to Alum Rock Avenue along Capitol Avenue. The new line will include a station at the Great Mall that may provide for the possible connection to the Montague/Capitol Station. In downtown San Jose, the Guadalupe Corridor LRT runs directly through the downtown on 1st and 2nd streets and provides service between south San Jose and north San Jose. Six LRT stations within the downtown area provide connections to many bus lines.

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 corridor include BART, AC Transit, Caltrain, ACE, Capitols, and Amtrak. BART's terminus in the corridor 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 seven 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 extending Caltrain service further south to Salinas, Monterey, and Santa Cruz. 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, and 68. 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 3910 for late commuters. Shuttle service from the stations to employment centers are provided by various public transit agencies. The Capitols 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 one million riders per day. Of these boardings, about 5,600 are estimated to include trips between Alameda and Santa Clara counties.

Table 4.2-1: 2000 Transit Boardings Operators in the Project Corridor

Operator	2000 Boardings [1]
BART	335,600
ACE	3,800
ACE Shuttles	1,500
ACE Entire System	5,300
Capitols [2]	2,800
VTA LRT System	
Guadalupe LRT	22,800
West Tasman LRT	5,000
Almaden Shuttle LRT	1,400
Subtotal	*29,200*
VTA Bus System	
VTA Express [3]	2,400
VTA Express/Limited	5,300
Local Bus	145,400
Subtotal	*153,100*
VTA Entire System	182,300
Caltrain	33,000
AC Transit	209,000
Total	**1,137,900**

Notes:
[1] The table presents 2000 data because the year 2000 was the basis for modeling.
[2] Does not include boardings from outside 9-county region.
[3] Only includes Express Routes 140, 180, and 520 traveling between Alameda and Santa Clara counties.
Source: Hexagon Transportation Consultants, Inc., 2003.

4.2.3.2 2025 Transit Services

No-Action Alternative

New transit services and capital projects programmed for the SVRTC 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. Table 3.2-2 in Chapter 3, *Alternatives*, gives additional detail and service characteristics.

- Vasona LRT
- Tasman East/Capitol LRT
- Downtown/East Valley LRT
- BRT – Line 22/Line 300
- BRT – Monterey Highway – Line 66/Line 68
- BRT – Stevens Creek Boulevard – Line 23
- 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

Baseline Alternative

Chapter 3.3, *Alternatives/New Starts Baseline Alternative,* describes the proposed transit services under the Baseline Alternative in detail. Highlights of the proposed services include the following:

- Expanded express bus service between (1) the Central Valley, Tri-Valley, and central Contra Costa County and the planned BART Warm Springs Station in southern Fremont, Alameda County; and (2) the planned BART Warm Springs Station and various Silicon Valley destinations in Santa Clara County. This expanded service would make use of I-880 and I-680 high-occupancy vehicle (HOV) lanes either already existing or programmed to be constructed.
- Three new busway connectors to facilitate bus circulation into and out of the planned BART Warm Springs Station and connecting I-880 to the Montague Expressway.

BART Alternative

The BART Alternative includes a BART rail transit line constructed on the San Jose Branch railroad ROW owned by VTA (formerly owned by UPRR) between the planned BART Warm Springs Station and Santa Clara Street in San Jose, continuing in a subway under public and private property through east and

downtown San Jose, and terminating at grade near the Santa Clara Caltrain Station. The 16.3-mile BART Alternative would have seven stations, plus one future station:

- 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
- Civic Plaza/SJSU – at East Santa Clara Street between 4th and 7th streets
- Market Street – at West Santa Clara Street between 1st Street and Almaden Avenue
- Diridon/Arena – south of and parallel to West Santa Clara Street between Autumn and White streets
- Santa Clara – at Benton Street/Brokaw Road between El Camino Real and Coleman Avenue.

Chapter 3.4, *Alternatives/BART Extension Alternative*, describes the BART Alternative in more detail.

4.2.3.3 Projected Rail and Bus Patronage in the Corridor

Travel demand forecasts, based on the 2025 transit network assumptions described above, have been developed for each project alternative. Forecasts include estimates of transit activity and trip-making in the SVRTC. Evaluation of future patronage focuses on new trips, BART systemwide trips, location of trips, and the differences among the three alternatives: No-Action, Baseline, and BART.

No-Action Alternative in 2025

Table 4.2-2 summarizes corridor transit projections for 2025 under the No-Action Alternative. Transit trips on all transit operators in the corridor are projected to grow approximately 50 percent between 2000 and 2025, increasing from 1.14 million in 2000 to 1.72 million in 2025. Systemwide BART trips will increase from 335,600 to over 518,300. Transit trips between Alameda and Santa Clara counties are expected to increase by 60 percent over the same period, from about 5,600 per day to almost 9,000 per day.

Table 4.2-2: Projected Average Weekday Transit Trips - No-Action Alternative

Total Average Weekday Trips	2000	2025	Percent Growth
All Transit Operators in Area [1]	1,137,900	1,679,382	48%
Between Alameda and Santa Clara Counties	5,600 [2]	8,975	60%
BART Systemwide	335,600	518,316	54%

Notes:
[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 ACE or express buses.
[2] Estimated from model calibration data by VTA, 2003.
Source: Travel Demand Forecasts Report, Hexagon Transportation Consultants, Inc., 2003.

Baseline and BART Alternatives in 2025

New Linked Transit Trips

Table 4.2-3 compares the Year 2025 transit ridership forecasts for the EIS/EIR study alternatives 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 BART Alternative would generate the highest number of new average weekday linked transit trips, 39,270 trips, in comparison to the No-Action Alternative. It would generate 32,445 new average weekday linked transit trips in comparison to the Baseline Alternative. This is a result of the BART Alternative serving the greatest number of average weekday transit trips, 1.72 million, compared with the Baseline and the No-Action alternatives serving about 1.69 and 1.68 million transit trips, respectively. New transit trips were calculated by comparing the projected total number of average weekday linked transit trips in 2025 for each alternative against both the No-Action and the Baseline Alternative. The row labeled "Average Weekday Trips" represents total daily linked 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.

In 2025, MOS-1E would generate 1,714,677 average weekday transit trips within the entire Bay Area, 3,976 less than the full-build BART Alternative. MOS-1E is projected to have 35,295 new linked transit trips compared with the No-Action Alternative and 28,470 more than the Baseline Alternative.

Table 4.2-3: Total Average Weekday and New Linked Transit Trips in 2025 [1]

Performance Measure	Alternatives			
	No-Action	Baseline	BART Extension	MOS-1E
Total Average Weekday Trips [2]	1,679,382	1,686,207	1,718,653	1,714,677
New Linked Transit Trips Compared to No-Action	N/A [3]	6,825	39,270	35,295
New Linked Transit Trips Compared to Baseline	N/A [3]	N/A [3]	32,445	28,470
New Linked Transit Trips Compared to BART Extension	N/A [3]	N/A [3]	N/A [3]	-3,976

Notes:

[1] Linked transit trips exclude transfer boardings. New linked trips are diverted almost entirely from auto trips.

[2] 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.

[3] N/A = Not Applicable

Source: Travel Demand Forecasts Report, Hexagon Transportation Consultants, Inc., 2003.

Total Average Weekday BART Boardings

The projected change in BART system 2025 ridership was also tabulated and compared for the study alternatives. Table 4.2-4 presents the results by showing comparisons to No-Action and Baseline ridership forecasts. The BART Alternative is projected to increase BART systemwide ridership by more than 78,000 average weekday boardings (15.1 percent). In comparison, the Baseline Alternative is projected to increase BART ridership by only about 6,850 boardings (1.3 percent).

Table 4.2-4: Total Average Weekday BART System Boardings in 2025				
Performance Measure	**Alternatives**			
	No-Action	**Baseline**	**BART Extension**	**MOS 1-E**
Total Average Weekday Boardings	518,316	525,168	596,435	592,244
Change from No-Action [1]	N/A [2]	6,852	78,119	73,928
Change from Baseline [1]	-6,852	N/A [2]	71,267	67,076
Change from BART Extension	-78,119	-71,269	N/A [2]	-4,191

Notes:
[1] Change represents new BART system boardings.
[2] N/A = Not Applicable
Source: Travel Demand Forecasts Report, Hexagon Transportation Consultants, Inc., 2003.

In 2025, MOS-1E is projected to have 592,244 average weekday BART system boardings, which is 4,191 less than the full-build BART Alternative. MOS-1E would still produce greater BART system boardings than the No-Action and Baseline alternatives, with 73,928 and 67,076 more boardings, respectively.

Average Weekday Transit Trips on BART Alternative

As shown in Table 4.2-5, the BART Alternative is projected to serve approximately 83,585 average daily transit trips in 2025. In contrast to the BART Alternative, the Baseline Alternative's express bus service from the BART Warm Springs Station to Silicon Valley would serve 22,550 trips per day, a difference of over 61,000 trips per day. Thus, the BART Alternative would serve almost four times as many trips per day as would the proposed Baseline transit service in the corridor.

Table 4.2-5: Average Weekday Transit Trips Served by BART Alternative in 2025				
	BART Alternative		**MOS-1E**	
Location	**Number of Trips**	**Percent**	**Number of Trips**	**Percent**
Between Other Counties and Santa Clara County	55,245	66%	56,460	69%
Within Santa Clara County	28,340	34%	25,669	31%
Total Average Weekday Trips on BART Alternative	**83,585**	**100%**	**82,130**	**100%**
Source: Travel Demand Forecasts Report, Hexagon Transportation Consultants, Inc., 2003.				

Approximately 78,119 (93 percent) of the BART Alternative's 83,585 trips would be new trips on BART as a result of its service to and within Santa Clara County. The remaining 5,466 trips (7 percent) are projected to ride BART in the absence of an extension, but are now projected to be riding BART into Santa Clara County. Approximately two-thirds (55,245) of these projected trips will be between other counties and Santa Clara County. This is more than 34,000 average daily trips than were projected for the Baseline Alternative, as shown in Table 4.2-6. The BART Alternative is also projected to serve 28,340 average daily weekday trips made completely within Santa Clara County. The BART Alternative ridership within Santa Clara County also contributes to a projected increase in VTA LRT ridership (4.9 percent) and an increase of about 1.6 percent in overall VTA transit trips.

Ridership for the MOS-1E scenario is slightly lower than for the full-build BART Alternative due to the deferral of two stations. MOS-1E would have 82,130 average weekday transit trips, 1,455 fewer than the full-build BART Alternative in 2025. MOS-1E is projected to have 56,460 average weekday transit trips served by BART between other counties and Santa Clara County (1,215 more than the full-build BART Alternative) and 25,669 weekday transit trips within Santa Clara County (2,671 less than the full-build BART Alternative). The proportion of trips between other counties and Santa Clara County is slightly higher for MOS-1E than the full-build BART Alternative (69 percent compared with 66 percent), reflecting a slightly faster operating time for MOS-1E due to the deferral of the Berryessa and Civic Plaza/SJSU stations to MOS-2E.

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 corridor (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 No-Action and Baseline ridership forecasts.

Table 4.2-6: Total Weekday Transit Trips Between Other Counties and Santa Clara County in 2025

Performance Measure	Alternatives			
	No-Action	Baseline	BART Extension	MOS-1E
Total Weekday Trips	8,975	20,728	55,245	54,460
Change from No-Action	N/A [1]	11,753	46,269	47,485
Change from Baseline	-11,753	N/A [1]	34,516	35,732

Note:
[1] N/A = Not Applicable
Source: Travel Demand Forecasts Report, Hexagon Transportation Consultants, Inc., 2003.

The BART Alternative does compete, in a sense, with some other transit services. Examples include ACE, the Capitols, and to a lesser extent Caltrain. The BART Alternative is projected to reduce ridership by about 23 percent for all three of these existing rail services combined. This projection is due, in part, to over 5,500 projected daily trips on the connecting express bus services over the Altamont Pass and from the Tri-Valley area.

Projected Ridership Volumes at BART Alternative Stations

Table 4.2-7 shows the number of projected average weekday boardings and alightings at each planned station along the BART Alternative, including home-based work and non-work trips. The three highest volume stations each have more than 20,000 projected boardings and alightings. These stations offer the best mode transfer opportunities to bus, light rail, and commuter rail services.

Deferring the Berryessa and Civic Plaza/SJSU stations for MOS-1E shifts riders to nearby stations. Riders that would have used the Berryessa Station would most likely shift to the Montague/Capitol or Alum Rock stations. For MOS-1E in 2025, Montague/Capitol would have 27,378 boardings and alightings (4,804 more than the full-build BART Alternative). The Alum Rock Station would have 16,173 boardings and alightings (4,818 more than the full-build BART Alternative). Similarly, the Market Street Station, which would gain riders from the Civic Plaza/SJSU Station, would have 30,704 boardings and alightings compared with 23,885 for the full-build BART Alternative. The Diridon/Arena and Santa Clara stations would have slightly less boardings and alightings under MOS-1E.

Table 4.2-7: BART Alternative Average Weekday Boardings and Alightings in 2025				
BART Alternative Stations	**Home-based Work**	**Non-work**	**Total [1]**	**MOS-1E Total**
Montague/Capitol	19,125	3,449	22,574	27,378
Berryessa	8,395	2,843	11,238	0
Alum Rock	8,266	3,089	11,355	16,173
Civic Plaza/SJSU	3,991	4,617	8,608	0
Market Street	18,469	5,416	23,885	30,704
Diridon/Arena	10,757	4,127	14,884	13,899
Santa Clara	15,723	4,601	20,324	19,664
Total	**84,726**	**28,142**	**112,868**	**107,818**

Note:

[1] The South Calaveras Future Station would draw 8,200 boardings and alightings per day, increase total ridership by 6,000 boardings and alightings per day (118,900), and decrease ridership at the Montague/Capitol Station by 2,100 boardings and alightings per day (20,500).

Source: Travel Demand Forecasts Report, Hexagon Transportation Consultants, Inc., 2003.

Mode of Access at BART Alternative Stations

Table 4.2-8 presents projected mode of access at the BART Alternative stations for the average weekday ridership. Transit modes would account for half of the access trips, while 22 percent of access trips would walk or use bicycles. The high use of non-auto modes is due to the relative richness of transit connections to BART and the proximity of jobs and housing to BART stations in the downtown areas served by the proposed extension.

Table 4.2-8: Mode of Access at BART Alternative Stations									
Station	**Walk / Bike**	**Bus**	**LRT**	**APM [1]**	**Commuter Rail [2]**	**Auto**			**Total**
						KNR [3]	**PNR [4]**	***Subtotal***	
Montague/Capitol	6%	40%	35%	-	-	4%	15%	*19%*	100%
Berryessa	13%	39%	-	-	-	5%	43%	*48%*	100%
Alum Rock	15%	-	14%	-	-	19%	52%	*71%*	100%
Civic Plaza/SJSU	96%	0.1%	4%	-	-	-	-	-	100%
Market Street	40%	33%	27%	-	-	-	-	-	100%
Diridon/Arena	11%	12%	26%	-	10%	8%	33%	*41%*	100%
Santa Clara	13%	53%	-	12%	8%	3%	11%	*14%*	100%
Total [5]	**24%**	**30%**	**18%**	**2%**	**2%**	**5%**	**19%**	***24%***	**100%**

Notes:

[1] APM = Automated People Mover

[2] Commuter Rail = Caltrain, Ace, and Capitols

[3] Kiss-and-ride

[4] Park-and-ride

[5] The addition of the South Calaveras Future Station changes the total percentages only slightly: walk/bike increases to 23 percent and LRT decreases to 16 percent.

Source: Hexagon Transportation Consultants, Inc., and VTA, 2003.

In 2025, MOS-1E would have similar station mode of access percentages, as identified for the full-build BART Alternative, except for the Montague/Capitol, Alum Rock, and Market Street stations. With the deferral of the Berryessa Station, many riders would shift to the Montague/Capitol Station by bus. Others would shift to the Alum Rock Station, accessing the station via re-routed buses and kiss-and-ride trips. With the deferral of the Civic Plaza/SJSU Station, pedestrian and bike mode of access would shift to the Market Street Station.

Drive access is projected to make up 27 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 4.2.3 discusses the park-and-ride demand at future BART extension stations, while Chapter 5, *BART Core System Parking Analysis*, discusses BART systemwide parking.

BART Alternative in 2015

Table 4.2-9 presents results of BART ridership projections by extension station for the 2015 MOS scenarios, with a comparison to 2025. MOS-1E in 2015 would have between 8 to 18 percent fewer riders per station than MOS-1E in 2025.

Table 4.2-9: BART Alternative Projected Average Weekday Boarding and Alightings

BART Alternative Stations	MOS-1E 2015	MOS-1F 2015	MOS-1E 2025	BART Alternative 2025
Montague/Capitol	23,238	19,435	27,378	22,574
Berryessa	0	9,745	0	11,238
Alum Rock	14,492	9,863	16,173	11,355
Civic Plaza/SJSU	0	6,710	0	8,608
Market Street	26,513	21,000	30,704	23,885
Diridon/Arena	12,455	12,318	13,899	14,884
Santa Clara	18,226	18,031	19,664	20,324
Total	**94,924**	**97,102**	**107,818**	**112,868**
BART System Total	**1,052,068**	**1,060,440**	**1,184,488**	**1,192,870**

Source: Hexagon Transportation Consultants, Inc., March 2003.

Table 4.2-10 illustrates the projected growth of total boardings and alightings for the total BART system for these options compared with the 2015 No-Action Alternative. With MOS-1E, boardings and alightings would increase by 133,034 on the BART system in 2015. MOS-1F in 2015 would increase total BART system ridership by 141,400 additional boardings and alightings or 15 percent compared with the No-Action Alternative. The BART Alternative in 2025 would add 273,800 more boardings and alightings, or 30 percent of total BART system passengers, compared with the 2015 No-Action Alternative. MOS-1E in 2025 would have a slightly less increase than the full-build BART Alternative.

Table 4.2-11 lists the breakdown of BART trips projected to be served by the extension stations in 2015. The breakdown of trips by the MOS scenarios is similar to that previously shown in Table 4.2-5 for 2025, with about two thirds crossing the county line and about one third within Santa Clara County.

Table 4.2-10: Total BART System Boardings and Alightings by Alternative and Year					
	No-Action 2015	**MOS-1E 2015**	**MOS-1F 2015**	**MOS-1E 2025**	**BART Alternative 2025**
Boardings and Alightings	919,034	14%	1,060,440	1,184,488	1,192,870
Increase Compared to 2015 No-Action	--	133,034	141,406	265,454	273,836
Percent Growth Compared to 2015 No-Action	--	1,052,068	15%	29%	30%
Source: Hexagon Transportation Consultants, Inc., March 2003.					

Table 4.2-11: Average Weekday Transit Trips Served by BART Alternative MOS Scenarios in 2015				
Location	**MOS-1E**	**Percent**	**BART Alternative**	**Percent**
Between Other Counties and Santa Clara County	48,324	68%	46,864	65%
Within Santa Clara County	22,852	32%	24,921	35%
Total Average Weekday Trips for MOS Scenarios	**71,176**	**100%**	**71,785**	**100%**
Source: Hexagon Transportation Consultants, Inc., March 2003.				

At start-up 2015 conditions for MOS-1E, the number of average weekday transit trips served by BART decreases to 71,176. Of those, 48,324 (68 percent) trips occur between other counties and Santa Clara County, 22,852 (32 percent) occur within Santa Clara County. For MOS-1F in 2015, the number of weekday transit trips is reduced to 71,785, of which 46,864 (65 percent) trips occur between other counties and Santa Clara County and 24,921 (35 percent) occur within Santa Clara County.

4.2.3.4 Travel Time Benefits

Person-Hours Saved

Travel time savings to all persons in the SVRTC reflect the effectiveness of the transportation services provided by each alternative relative to the Baseline Alternative. 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. For this analysis, the Baseline and BART alternatives are compared to the No-Action Alternative.

Net changes in travel time in 2025 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 Baseline Alternative relative to the No-Action Alternative is presented in Table 4.2-12.

The BART Alternative would generate travel time savings of nearly 67,000 hours per day in comparison to the No-Action Alternative, and more than 57,000 hours saved in comparison to the Baseline Alternative, as shown in Table 4.2-12.

The person-hours saved for MOS-1E in 2025 are minimal compared to the full-build BART Alternative. The daily travel time in hours for MOS-1E is 7,635,944, a 13-hour reduction in daily travel time over the full-build BART Alternative.

Table 4.2-12: Daily Travel Time Savings in 2025

Performance Measure	No-Action	Baseline	BART Extension	MOS-1E
Daily Travel Time (Hours)	7,702,868	7,693,182	7,635,957	7,635,944
Change from No-Action [1]	N/A[2]	-9,686	-66,911	-66,924
Change from Baseline [1]	+9,686	N/A [2]	-57,225	-57,238
Change from BART Extension	+66,911	+57,225	N/A [2]	-13

Notes:
[1] Negative values represent travel time savings.
[2] N/A = Not Applicable
Source: Travel Demand Forecasts Report, Hexagon Transportation Consultants, Inc., 2003.

Travel Time between Selected Origin-Destination Pairs

One of the key objectives for the BART Alternative is to reduce transit travel times within the corridor. Since travel time is a key factor in mode choice decisions (e.g., the selection of using an auto versus public transit), traffic congestion and air pollution would be reduced if more people chose to use transit rather than their private auto. More trips on transit also lead to faster highway travel because of reduced congestion. Table 4.2-13 presents a comparison of total door-to-door auto and transit travel times between seven selected origins and two selected destinations (14 origin-destination pairs) in the corridor.

No-Action Alternative

The No-Action Alternative would rely on the transportation and transit improvements planned in the RTP and VTP 2020. These improvements would result in drive-alone travel times ranging from 15 to 98 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 20 and 70 minutes and transit travel times range between 28 and 87 minutes for the same origin-destination pairs. Table 4.2-13 includes travel times for specific origin-destination pairs by travel mode.

Baseline Alternative

The Baseline Alternative would expand express bus service to the BART Warm Springs Station and various Silicon Valley destinations in Santa Clara County. The service into Santa Clara County would augment existing express bus service and improvements planned in VTP 2020. These improvements in express bus service produce substantial travel time savings (up to 20 minutes) between some Alameda County residential areas and a few Silicon Valley employment sites such as those in the Great America area. However, because the Baseline service improvements would still require extensive transit-to-transit transfers to reach most Santa Clara County employment sites, the travel times between most origin and destination pairs were not improved. The average savings for all origin-destination pairs is less than two minutes. In particular, the Baseline does not any provide travel time improvements to the San Jose downtown area.

Table 4.2-13: 2025 AM Peak Door-to-Door Travel Time (Minutes) For Selected Origin-Destination Pairs

From	To	Drive-Alone				Shared-Ride				Transit			
		No-Action	Baseline	BART Extension	MOS-1E	No-Action	Baseline	BART Extension	MOS-1E	No-Action	Baseline	BART Extension	MOS-1E
North Milpitas Boulevard	Downtown San Jose	21	21	21	21	26	26	26	26	39	40	29	27
	Great America	20	20	20	20	20	20	20	20	28	28	28	28
Hostetter-Berryessa	Downtown San Jose	15	14	14	14	20	20	20	20	43	43	24	24
	Great America	26	26	26	26	28	28	27	27	34	34	34	34
East San Jose	Downtown San Jose	17	17	17	16	21	21	21	21	36	36	26	25
	Great America	35	36	36	35	33	34	34	33	46	46	46	46
South Fremont	Downtown San Jose	35	35	34	34	34	33	33	33	61	63	31	29
	Great America	35	34	33	34	28	28	27	27	77	57	38	38
Newark	Downtown San Jose	48	48	46	46	41	40	39	39	80	84	51	49
	Great America	47	47	45	46	35	34	33	33	87	76	58	58
Union City	Downtown San Jose	56	55	53	54	48	47	45	45	67	67	43	41
	Great America	55	54	53	54	42	41	40	40	54	54	49	49
Pleasanton	Downtown San Jose	97	96	95	92	73	73	72	71	80	80	80	80
	Great America	98	97	96	94	70	70	69	68	67	67	67	67

Source: Travel Demand Forecasts Report, Hexagon Transportation Consultants, Inc., 2003.

BART Alternative

The BART Alternative does provide a high quality transit linkage between Alameda County and downtown San Jose, and Table 4.2-13 shows the associated travel time savings. The average transit travel time savings for all origin-destination pairs was projected to be about 14 minutes, with a maximum savings of 39 minutes. Notable transit travel time improvements are projected for transit trips to downtown San Jose from various points in Alameda County, including Fremont (30 minutes faster), Newark (29 minutes faster), and Union City (24 minutes faster). Travel times into the downtown are also projected to improve by 10-19 minutes from various points in eastern Santa Clara County. Only the transit connection between Pleasanton in east Alameda County 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 No-Action Alternative.

Auto travel times also show improvement for many origin-destination pairs. Under the BART Alternative compared with the No-Action Alternative, the average auto travel time saving for both drive-alone and shared-ride modes for all origin-destination pairs in Table 4.2-13 was projected to be about one minute, with a maximum saving of three minutes. This is about an average 2 percent improvement for auto travel times, with a maximum 6 percent improvement. Also, see Section 4.2.5 for a summary of freeway level of service under the BART Alternative.

Under MOS-1E in 2025, the deferral of the Berryessa and Civic Plaza/SJSU stations decreases travel time for passengers. As a result, the travel time for certain origin-destination pairs under MOS-1E is slightly less than for the full-build BART Alternative.

4.2.3.5 Impact Assessment and Mitigation Measures

No-Action Alternative

Projects planned under the No-Action Alternative, listed in Section 4.2.2.2, would undergo separate environmental review to define traffic impacts.

Baseline Alternative

There are no substantial adverse impacts to transit use from the Baseline Alternative. As a result, no transit mitigation measures are proposed.

BART Alternative

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

- Increased number of buses required to serve BART Alternative stations
- Reduced ridership on ACE, Capitols, and Caltrain.

Examples of adverse ridership competition include the ACE, Capitols, and to a lesser extent the Caltrain. As noted previously, the BART Alternative is projected to reduce ridership by about 23 percent for all three of these existing rail services combined. This projection is due, in part, to over 5,500 projected daily trips on the connecting express bus services over the Altamont Pass and from the Tri-Valley area. But because the BART Alternative would cause a projected 4.9 percent increase in VTA LRT ridership, 1.6 percent increase in overall VTA transit trips, 15.1 percent increase in BART systemwide ridership, and 2.3 percent increase in total transit trips, these effects are not considered as substantial adverse impacts to

transit use. Since there are no substantial adverse impacts to transit use under the BART Alternative, no transit mitigation measures are proposed.

Since ridership levels would remain fairly comparable, the MOS scenarios would have similar impacts to transit services as the full-build BART Alternative. Thus, the MOS scenarios would require an increase in the number of buses to serve BART stations, would increase ridership on VTA light rail, and would reduce the number of riders on ACE, Capitols, and Caltrain.

4.2.4 PARKING

4.2.4.1 Existing Parking

Much of the parking available around one-half mile radius of each of the proposed 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 northwest 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. SJSU provides parking for students at three multi-level garages located within one-half mile of the Civic Plaza/SJSU Station. SJSU also provides student parking at a remote location adjacent to Spartan Stadium south of I-280. A free shuttle links this parking lot with the SJSU campus.

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.

4.2.4.2 Park-and-Ride Demand

Table 4.2-14 summarizes base case park-and-ride space requirements for the proposed five BART extension stations planned with drive access. Adequate parking is important for BART to prevent spill over into neighborhoods surrounding the proposed stations. The park-and-ride demand was projected as part of the ridership modeling. It took into account 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 4.2.5 includes the vehicle trips generated by park-and-ride and kiss-and-ride trips at these five stations. For information on BART systemwide parking, please refer to Chapter 5, *BART Core System Parking Analysis*.

The park-and-ride demand for the BART Alternative is projected to approach 10,000 spaces for the five extension stations. This includes 1,000 spaces shifted from the Alum Rock Station to Berryessa Station to address community concerns about site impacts at the Alum Rock Station. These two stations would have 2,500 spaces each. The Santa Clara Station would have slightly over 1,000 spaces, with Montague/Capitol at approximately 1,600 and Diridon/Arena at almost 2,300 spaces.

Table 4.2-14: 2025 Park-and-Ride Space Requirements					
Station Name	**Modeled 2025 PNR Demands [1]**	**Additional Spaces for Spares and Surges (10% of Model)**	**Number of Surface Parking**	**Number of Structured Parking**	**Total Spaces**
Montague/Capitol	1,480	148	356	1,272	1,628 [2]
Berryessa [3]	2,273	227	160	2,340	2,500
Alum Rock [3]	2,273	227	0	2,500	2,500
Diridon/Arena	2,056	206	0	2,262	2,262
Santa Clara	970	97	0	1,067	1,067
Totals	**9,052**	**905**	**516**	**9,441**	**9,957**

Notes:

[1] PNR = park-and-ride

[2] The South Calaveras Future Station would have 990 spaces based on demand and would reduce the parking demand at Montague/Capitol by 605 spaces.

[3] Includes a shift of 1,000 spaces from Alum Rock to Berryessa Station.

Source: Hexagon Transportation Consultants, Inc., February 2003.

The South Calaveras Future Station would have 990 spaces. This future station would enable a reduction of 605 spaces at the Montague/Capitol Station.

The parking requirements for MOS-1E and MOS-1F are less than the full-build BART Alternative, reflecting reduced parking demand for initial start-up conditions in 2015 and, in the case of MOS-1E, the deferred construction of the Berryessa Station and the associated parking facilities to MOS-2E. Without the Berryessa Station, MOS-1E in 2015 would have 7,340 parking spaces, reflecting lower demand at start-up; MOS-1F in 2015 would require 8,660 parking spaces or 1,297 less than the full-build BART Alternative. In 2025, MOS-1E would have 2,500 fewer parking spaces than the full-build BART Alternative would, with 7,457 total parking spaces. The comparison of parking spaces by station is provided in Table 4.2-15.

Table 4.2-15: Park-and-Ride Space Requirements for MOS Scenarios 2015 and 2025				
Station	**MOS 1-E (2015)**	**MOS-1F (2015)**	**MOS-1E (2025)**	**BART Alternative (2025)**
Montague/Capitol	1,628	1,414	1,628	1,628
Berryessa	0	2,175	0	2,500
Alum Rock	2,500	2,175	2,500	2,500
Diridon/Arena	2,262	1,968	2,262	2,262
Santa Clara	950	928	1,067	1,067
Total	**7,340**	**8,660**	**7,457**	**9,957**

Source: Hexagon Transportation Consultants, Inc., February 2003.

4.2.4.3 Potential Parking Arrangements

Caltrain and BART 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 connect with the SJIA, which may require special parking policies and arrangements. In addition, the Montague/Capitol Station would need to consider both LRT and BART patrons. VTA would continue to work with the cities and other transit agencies to implement appropriate parking policies and potential shared arrangements.

4.2.4.4 Design Requirements and Best Management Practices

Higher transit use than projected could create additional parking demand at any BART station, leading to parking spilling over into the surrounding neighborhood. These situations would require monitoring to determine if a problem is developing. Shared parking arrangements, parking enforcement, and neighborhood parking programs will be used to mitigate any spill over effects. VTA would continue to work with cities, agencies and communities to develop parking policies and programs, as appropriate.

4.2.4.5 Impact Assessment and Mitigation Measures

No-Action Alternative

Projects planned under the No-Action Alternative, listed in Section 4.2.2.2, would undergo separate environmental review to define parking impacts.

Baseline and BART Alternatives

No parking impacts requiring mitigation were identified for the Baseline or BART Alternative, or the MOS scenarios; therefore, no mitigation measures are required.

4.2.5 PEDESTRIANS AND BICYCLES

4.2.5.1 Existing Conditions

City of Milpitas

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 sites according to the VTA Santa Clara Valley Bikeways Map, July 2002. Bike lanes are provided on:

- Jacklin Road, between Milpitas Boulevard and Park Victoria Drive
- Yosemite Road, between Milpitas Boulevard and I-680
- Escuela Road, 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 vicinities:

- *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/Marylinn Drive.

City of San Jose

Pedestrian facilities in the study areas 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.

Berryessa Station

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
- Flickenger Road, between Murphy Road and Berryessa Road
- Capitol Avenue, between Hostetter Road and Berryessa Road

There is a bike path located along Penitencia Creek between Capitol Avenue and Mabury 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

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 Street and William Street

Civic Plaza/SJSU, Market Street and Diridon/Arena Stations

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

Within the vicinity of these sites, a bike lane is located on 17th Street north of San Antonio. A bike lane is provided on Park Avenue, between Naglee Avenue and Meridian Avenue. 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.

City of Santa Clara

Pedestrian facilities in the station area consist primarily of sidewalks along the streets in most residential and commercial areas. With the exception of the east side of Lafayette Street, 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, and Bellomy Street between Saratoga Avenue and Jackson Street. The I-280 to San Jose Airport cross-county bicycle corridor runs along Benton Street, through the proposed station site, and along Coleman Avenue.

4.2.5.2 Design Requirements and Best Management Practices

Baseline Alternative

The Baseline Alternative includes those pedestrian and bicycle improvements that would typically be provided as part of transportation improvements. The busway connectors would not preclude any of these improvements.

BART Alternative

BART and VTA transit station design guidelines require bicycle parking facilities. The two sets of guidelines are different, so for this study both sets of guidelines were used to estimate the number of bicycle parking spaces that should be initially provided at each station. The more stringent (i.e., higher) value for each BART Alternative station is recommended for preliminary station design purposes. The actual number of bicycle parking spaces to be provided should be determined by the station design team based on trying to attain these initial recommendations, but in consideration of 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 BART Alternative 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). Therefore, 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 should 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 480 bicycle parking spaces. Approximately two-thirds (315) should be long-term bicycle storage lockers and about 165 should short-term bicycle storage racks. Table 4.2-16 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 two downtown San Jose stations 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.

For MOS-1E, the bicycle parking facilities proposed for the Berryessa and Civic Plaza/SJSU stations would be deferred to MOS-2E. This would result in the deferral of 50 bicycle-parking facilities at Berryessa and 82 at the Civic Plaza/SJSU Station.

Table 4.2-16: Recommended Bicycle Parking Facilities - BART Alternative

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
Civic Plaza/SJSU	20	62	82	VTA
Market Street	25	73	98	VTA
Diridon/Arena	20	30	50	BART
Santa Clara	20	30	50	BART
Totals	**165**	**315**	**480**	

Source: Travel Demand Forecasts Report, Hexagon Transportation Consultants, Inc., 2003.

4.2.5.3 Impact Assessment and Mitigation Measures

No-Action Alternative

Pedestrian and bicycle facilities under the No-Action Alternative would not change substantially compared to existing conditions. However, any projects planned under the No-Action Alternative would undergo separate environmental review to define potential impacts to pedestrians and bicyclists to determine mitigation measures, if necessary.

Baseline and BART Alternatives

There are no impacts to pedestrians or bicycles from the Baseline or BART alternatives, or the MOS scenarios. No mitigation measures are required.

4.2.6 VEHICULAR TRAFFIC

The following assessment of vehicular traffic focuses on existing and anticipated future conditions in the SVRTC, including potential impacts associated with each of the project alternatives.

4.2.6.1 Existing Street and Highway System

The SVRTC 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 corridor 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 corridor from east to west. Major north-south streets within the corridor include the 10^{th}/11^{th} Street couplet, 13^{th} 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 San Jose airport. It is generally a four-lane freeway from SR 85 to Coleman Avenue, with auxiliary lanes near the I-280 interchange. North of Coleman, SR 87 becomes an at-grade arterial street with signalized intersections. The arterial section is currently being upgraded to a freeway, with a projected completion date of 2003.

- San Thomas 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 the City of 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 S. 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 the City of San Jose. Although the majority of Capitol Avenue is a four-lane divided roadway, some portions consist of six lanes. Construction of the Capitol Corridor VTA Light Rail line is currently under construction along Great Mall Parkway 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

4.2.6.2 Existing Traffic Volumes and Level of Service

Freeways

This section discusses existing AM-peak period traffic volumes, speeds, density, and level of service for selected freeways in the study area. Table 4.2-17 defines the level of service applied to freeways, while Table 4.2-18 summarizes the existing freeway level of service in the project area in 2000. Freeway segments in Table 4.2-18 are grouped by proposed BART station areas that would most affect the respective freeway segments. The results show that 23 of the 29 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 4.2-17: Freeway Segment Level of Service Definitions

Level of Service	Density (vehicles/mile/lane)
A	<10.0
B	10.1 - 16.0
C	16.1 - 24.0
D	24.1 - 46.0
E	46.1 - 55.0
F	>55

Source: Traffic Level of Service Analysis Guidelines, VTA, Congestion Management Program, October 1997.

Intersections

Existing traffic volumes for 121 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. Two station areas, Market Street, and Civic Plaza/SJSU, are omitted from the vehicle traffic analysis because they are planned to have no drive access. Figures 4.2-1 through 4.2-6 illustrate the location of

Table 4.2-18: Freeway Traffic Volumes and Levels of Service for 2000 Existing, 2025 No-Action, and 2025 BART Alternative Conditions

Freeway	ID	Segment	Dir.	Peak Hour	2000 EXISTING CONDITIONS				2025 NO-ACTION CONDITIONS				2025 BART ALTERNATIVE			
					Avg. Speed	2000 Volume	Density	LOS	Avg. Speed	2025 Volume	Density	LOS	Avg. Speed	2025 Volume	Density	LOS
MILPITAS [1]																
I-680	5	Calaveras to Jacklin	NB	PM	20	6,912	115.2	F	20	6,487	92.7	F	20	6,454	90.8	F
I-680	6	Jacklin to Scott Creek	NB	AM	50	5,467	36.4	D	50	5,846	33.4	D	50	5,822	33.0	D
I-680	6	Jacklin to Scott Creek	NB	PM	25	6,791	90.5	F	25	6,256	71.5	F	25	6,276	70.1	F
I-680	15	Scott Creek to Jacklin	SB	AM	60	6,618	36.8	D	60	5,835	27.8	D	60	5,799	27.0	D
I-680	20	Capitol to Hostetter	SB	PM	10	1,355	33.9	D	10	761	19.0	C	10	1,172	27.2	D
I-880	9	Great Mall to SR 237	NB	PM	10	5,483	182.8	F	10	6,565	218.8	F	10	6,601	217.9	F
I-880	13	Great Mall to Montague	SB	PM	15	5,228	116.2	F	15	6,253	139.0	F	15	6,145	134.8	F
I-880	14	Montague to Brokaw	SB	PM	15	3,963	132.1	F	15	5,891	130.9	F	15	5,925	128.8	F
SAN JOSE																
BERRYESSA STATION																
US 101	2	Oakland to I-880	NB	AM	10	6,824	227.5	F	10	7,457	248.6	F	10	7,087	236.2	F
US 101	9	I-880 to Oakland	SB	PM	10	6,628	220.9	F	10	7,020	234.0	F	10	6,973	232.4	F
ALUM ROCK STATION																
US 101	1	Tully to Story	NB	AM	10	6,591	219.7	F	10	7,529	251.0	F	10	7,404	237.0	F
US 101	2	Story to I-280	NB	AM	10	6,241	208.0	F	10	7,118	237.3	F	10	7,039	224.0	F
US 101	3	I-280 to Santa Clara	NB	AM	10	7,025	175.6	F	10	8,098	202.5	F	10	8,200	190.3	F
US 101	4	Santa Clara to McKee	NB	AM	10	5,951	198.4	F	10	7,364	245.5	F	10	7,092	225.8	F
US 101	18	Santa Clara to I-280	SB	PM	25	6,639	66.4	F	25	7,253	72.5	F	25	8,189	75.9	F
US 101	19	I-280 to Story	SB	PM	20	5,634	93.9	F	20	6,662	111.0	F	20	7,111	113.0	F
US 101	20	Story to Tully	SB	PM	20	4,800	120.0	F	20	5,157	128.9	F	20	5,391	127.1	F

continued

Table 4.2-18: Freeway Traffic Volumes and Levels of Service for 2000 Existing, 2025 No-Action and 2025 BART Alternative Conditions

Freeway	ID	Segment	Dir.	Peak Hour	2000 EXISTING CONDITIONS				2025 NO-ACTION CONDITIONS				2025 BART ALTERNATIVE			
					Avg. Speed	2000 Volume	Density	LOS	Avg. Speed	2025 Volume	Density	LOS	Avg. Speed	2025 Volume	Density	LOS
DIRIDON/ARENA STATION																
SR 87	1	Curtner to Almaden Expressway	NB	AM	20	4,372	109.3	F	20	4,698	117.5	F	20	4,852	117.8	F
SR 87	2	Almaden Expressway to Alma	NB	AM	25	5,333	106.7	F	25	5,501	110.0	F	25	5,727	111.7	F
SR 87	4	I-280 to Julian	NB	AM	15	4,236	141.2	F	15	4,493	149.8	F	15	4,838	154.1	F
SR 87	15	Julian to I-280	SB	PM	15	3,925	130.8	F	15	4,292	143.1	F	15	4,464	141.1	F
SR 87	16	I-280 to Alma	SB	PM	10	5,931	197.7	F	10	6,704	223.5	F	10	6,669	218.7	F
SR 87	17	Alma to Almaden Expressway	SB	PM	25	4,504	90.1	F	25	5,054	101.1	F	25	5,041	98.8	F
SR 87	18	Almaden Expressway to Curtner	SB	AM	65	2,492	19.2	C	65	3,091	23.8	C	65	3,164	24.0	D
SR 87	18	Almaden Expressway to Curtner	SB	PM	20	3,635	90.9	F	20	3,913	97.8	F	20	3,876	94.5	F
I-280	9	SR 87 to 10th	EB	PM	25	7,760	77.6	F	25	7,679	76.8	F	25	7,475	73.8	F
I-280	10	10th to SR 87	WB	AM	20	8,430	105.4	F	20	8,621	107.8	F	20	8,480	104.8	F
SANTA CLARA																
I-880	16	SR 87 to Coleman	SB	AM	60	5,497	30.5	D	60	5,797	32.2	D	60	5,769	32.1	D
US 101	21	Great America to Montague	SB	AM	60	5,949	24.8	D	60	6,974	29.1	D	60	6,859	28.5	D

Note:
[1] Does not assume the South Calaveras Future Station.
Source: Santa Clara Valley Transportation Authority, 2000 Monitoring and Conformance Report; and Hexagon Transportation Consultants, Inc., traffic impact analysis reports, 2003.

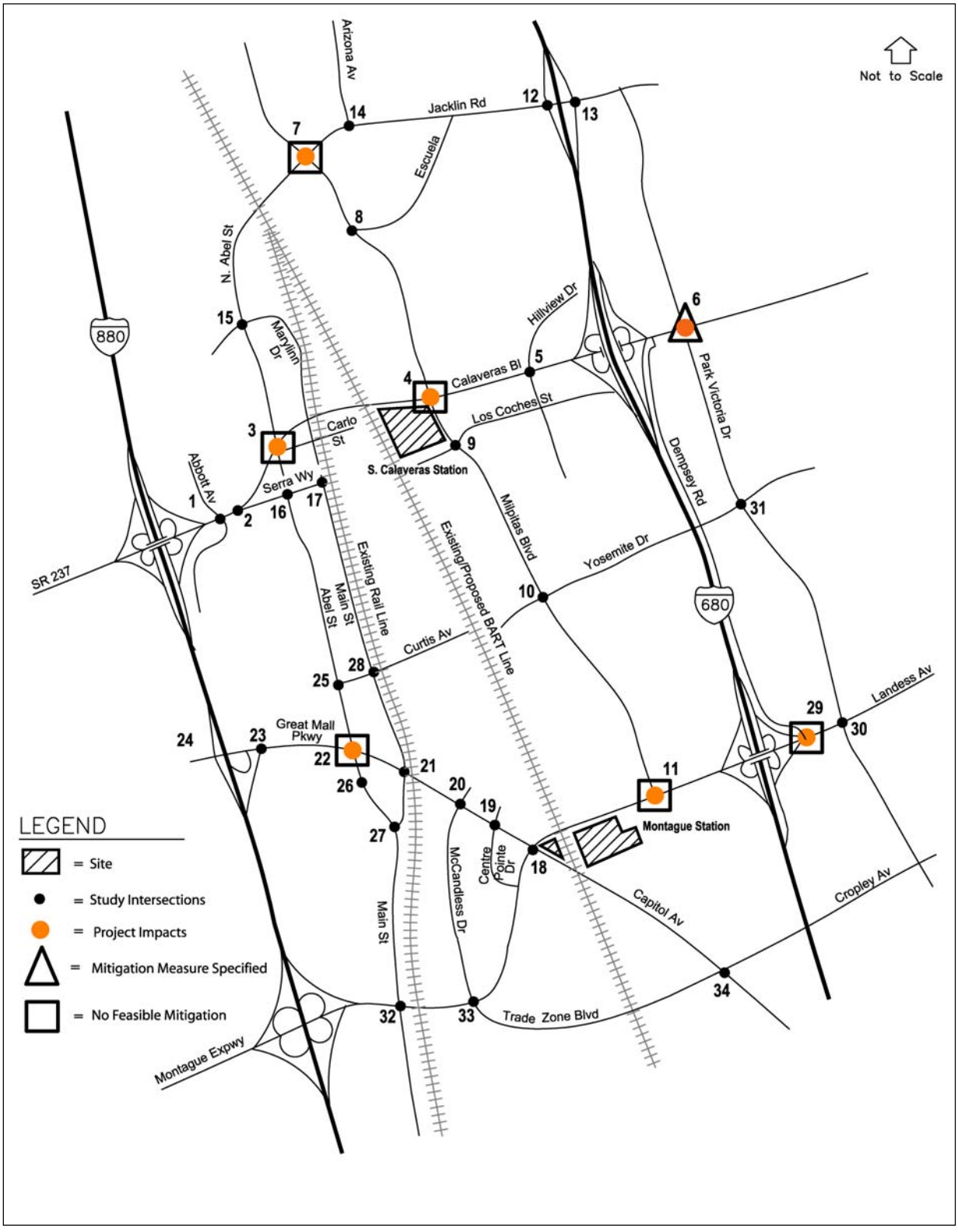

Figure 4.2-1: Milpitas – South Calaveras Future Station
2025 BART Alternative Level of Service Conditions

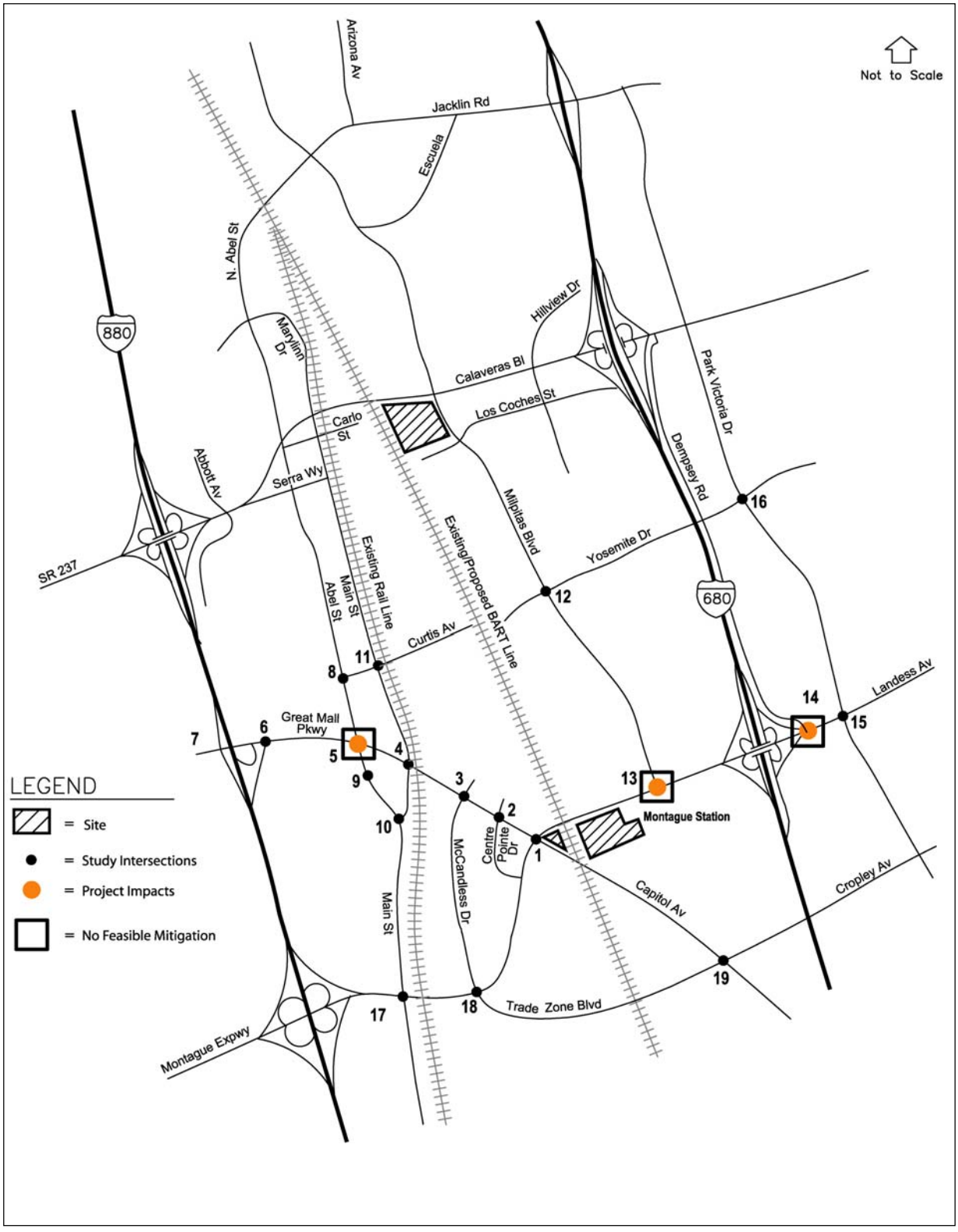

Figure 4.2-2: Milpitas – Montague/Capitol Station
2025 BART Alternative Level of Service Conditions

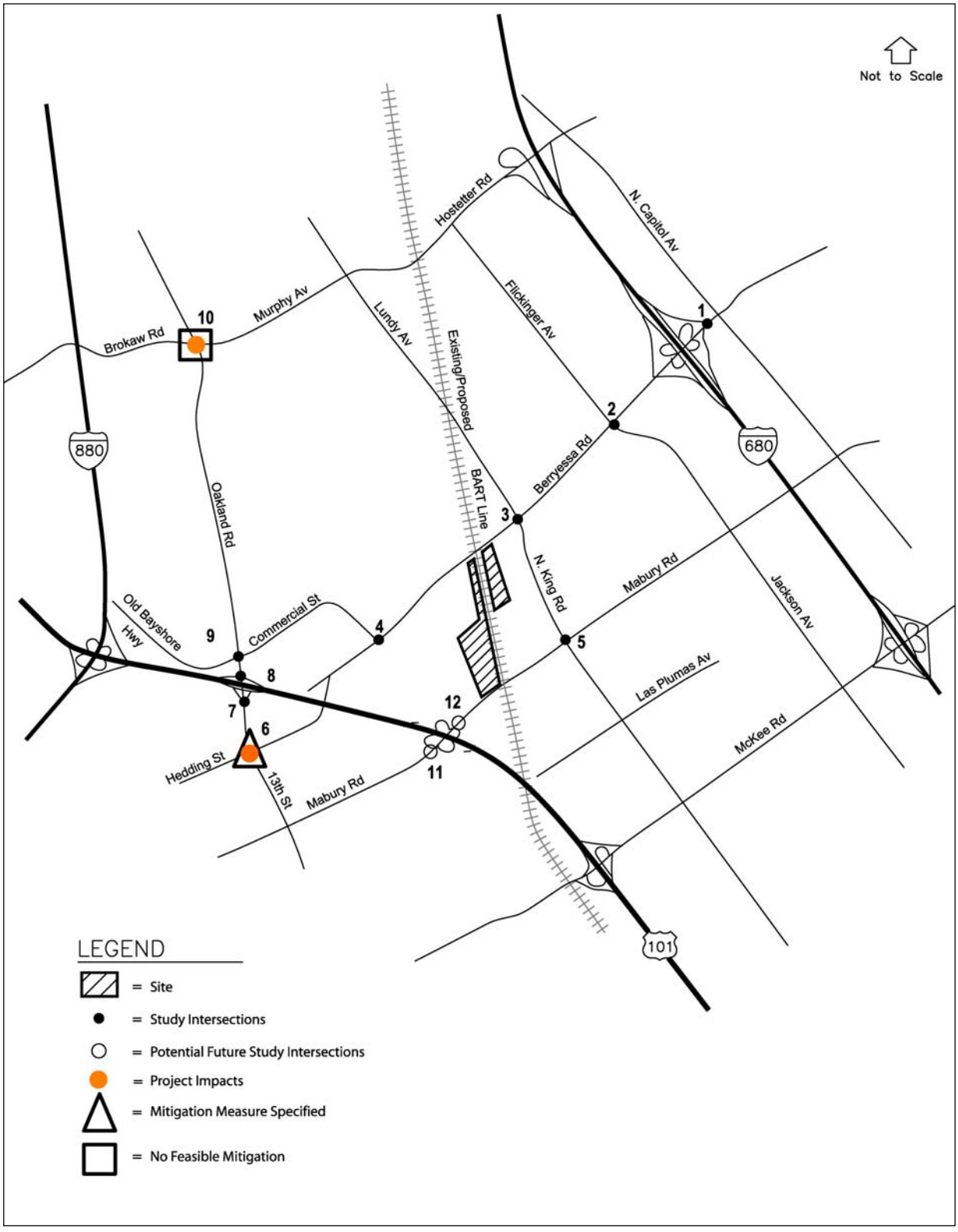

Figure 4.2-3: San Jose – Berryessa Station
2025 BART Alternative Level of Service Condition

Figure 4.2-4: San Jose – Alum Rock Station 2025
BART Alternative Intersection Level of Service Conditions

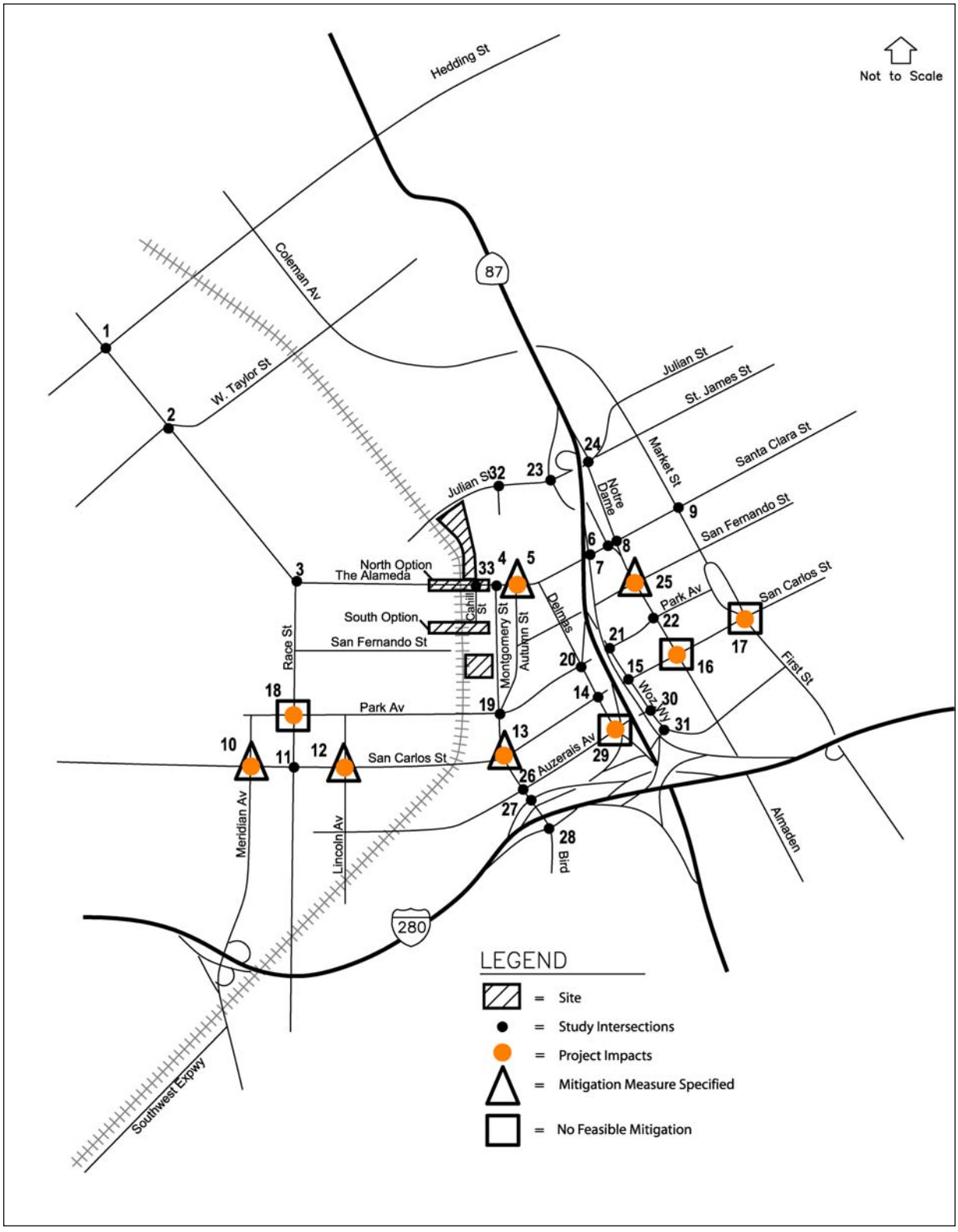

Figure 4.2-5: San Jose – Diridon/Arena Station
2025 BART Alternative Level of Service Conditions

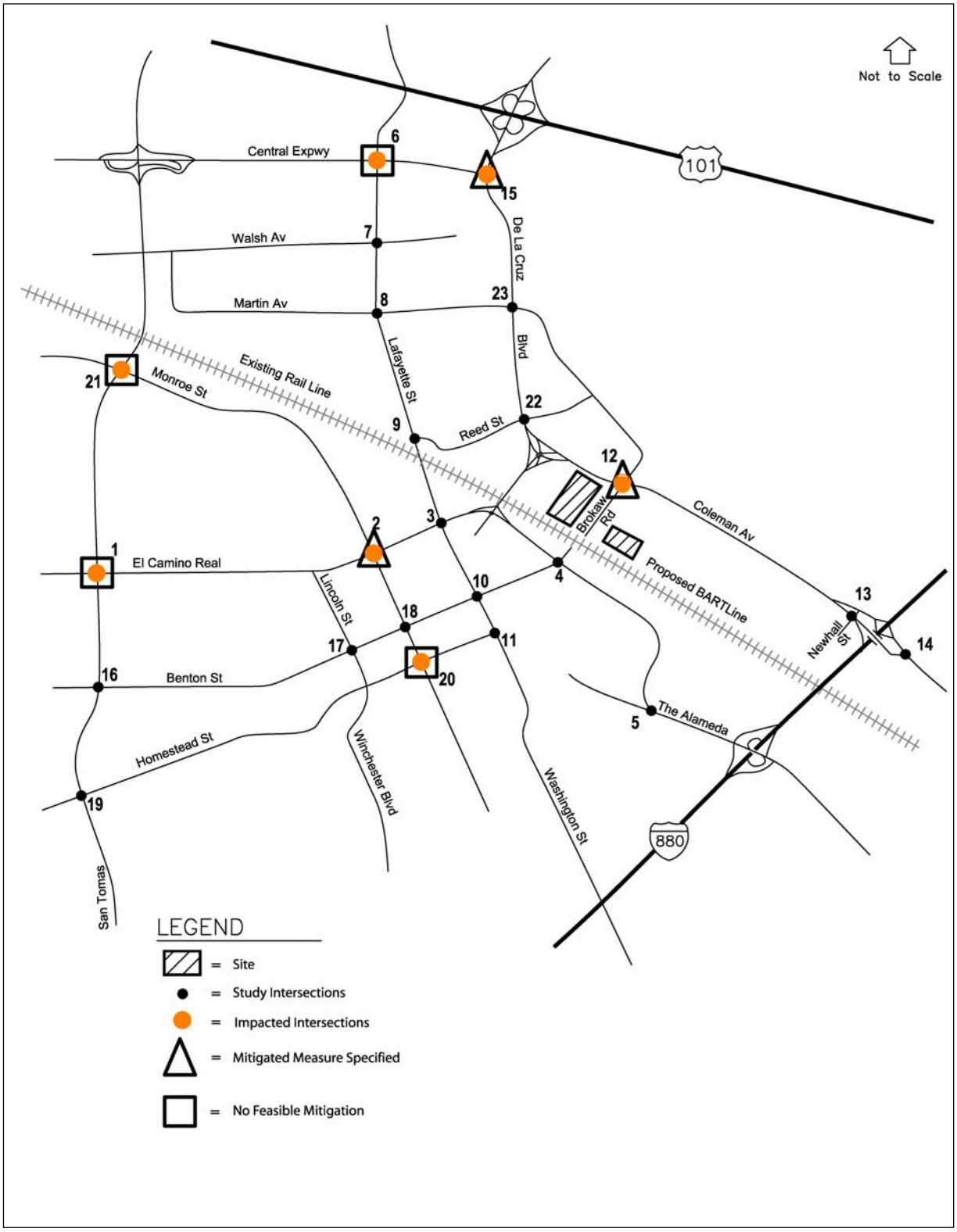

Figure 4.2-6: Santa Clara
2025 BART Alternative Level of Service Conditions

the study intersections discussed in this section. 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 TRAFFIX, which is consistent with the *1994 Highway Capacity Manual*. Level of service at signalized intersections is based upon the average delay experienced by vehicles passing through 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:

LOS	Average Vehicle Delay (seconds)
A	≤ 5.0
B	5.1 to 15.0
C	15.1 to 25.0
D	25.1 to 40.0
E	40.1 to 60.0
F	> 60.0

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 Baseline and BART alternatives 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 4.2-19 by BART station area. Of the 121 study intersections, existing conditions at 17 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.

Table 4.2-19: 2000 Existing Condition Intersection Summary

Station	# of Study Intersections	# of 2000 Existing Intersections with Unacceptable LOS [1]
South Calaveras Future	15	3
Montague/Capitol	19 [2]	8
Berryessa	12	0
Alum Rock	19	0
Diridon/Arena	33	0
Santa Clara	23	6
Total	**121**	**17**

[1] LOS E or F for a local intersection, LOS F for a CMP intersection

[2] Two of the intersections analyzed for the Montague/Capitol Station are also analyzed for the South Calaveras Future Station.

Source: Hexagon Transportation Consultants, Inc., traffic impact analysis reports, 2003.

4.2.6.3 Criteria for Assessing Project-Specific Impacts on Vehicular Traffic

The following items list the intersection and freeway level of service standards, or thresholds, for identifying when traffic impacts of proposed projects should be considered for possible mitigation. For this analysis, intersection and freeway impacts are determined by six criteria. It should be noted that impacts of the project are based on the addition of station traffic to 2025 BART Alternative background traffic volumes and compared to 2025 No-Action with Improvements conditions. The project is said to create an adverse impact for either peak hour if:

- The level of service at a local intersection degrades from an acceptable LOS D or better under 2025 No-Action with Improvements conditions to an unacceptable LOS E or LOS F under 2025 BART Alternative conditions.
- The level of service at a local intersection is an unacceptable LOS E or LOS F under 2025 No-Action with Improvements conditions and the addition of station trips causes both the critical-movement delay at the intersection to increase by four or more seconds and the V/C to increase by 0.01 or more. An exception to this rule applies when the addition of station traffic reduces the amount of average stopped delay for critical movements (i.e., the change in average stopped delay for critical movements is negative). In this case, the threshold of significance is an increase in the critical V/C value by 0.01 or more.
- The addition of station traffic causes a local intersection operating at LOS A or LOS B under 2025 No-Action with Improvements conditions to degrade two letter grades.
- The level of service at a CMP designated intersection degrades from an acceptable LOS E or better under 2025 No-Action with Improvements conditions to an unacceptable LOS F under 2025 BART Alternative conditions.
- The level of service at a CMP designated intersection is an unacceptable LOS F under 2025 No-Action with Improvements conditions and the addition of station trips causes both the critical movement delay at the intersection to increase by four or more seconds and the V/C to increase by 0.01 or more. An exception to this rule applies when the addition of station traffic reduces the amount of average stopped delay for critical movements (i.e. the change in average stopped delay for critical movements is negative). In this case, the threshold of significance is an increase in the critical V/C value by 0.01 or more.
- The level of service on a freeway segment is an unacceptable LOS F under 2025 BART Alternative conditions, and the number of station trips on that segment constitutes at least 1 percent of capacity on that segment.

4.2.6.4 2025 No-Action Alternative Street and Highway Conditions

Future Roadway Network

Several roadway transportation improvements are planned and would be operational by 2025. These improvements consist of street and freeway widenings and interchange improvements as identified in Chapter 3, *Alternatives*. There are no new freeways planned.

In general, the No-Action Alternative would not remove vehicle trips from the roadway, as would the Baseline and BART alternatives, and would therefore result in worse traffic congestion.

Freeway Traffic Volumes and Level of Service

The 2025 No-Action Alternative traffic and level of service for the 29 freeway segments are summarized in Table 4.2-18 above. Level of service is generally projected to deteriorate from the existing conditions.

In general, traffic density increases by 2025, reflecting increasing congestion as a result of traffic capacity not keeping up with traffic demand. Compared with existing conditions, traffic density in 2025 is higher on 22 of the 29 segments. In one segment, however, the Capitol-to-Hostetter segment of I-680, level of service actually improves from LOS D in 2000 to LOS C in 2025 No-Action condition. Traffic density is also lower in 2025 than under existing conditions for six of the eight freeway segments in the vicinity of Milpitas, mostly as a result of adding lanes on I-680.

Intersection Traffic Volumes and Level of Service

Future 2025 traffic volumes for 121 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 2025 conditions. Volumes from the 2025 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 show that 59 intersections are projected to operate at LOS E or LOS F during at least one peak hour (LOS F if the intersection is a CMP intersection).

2025 No-Action Conditions with Intersection Improvements

Based on the results of the year 2025 No-Action conditions level of service analysis, necessary improvements to support year 2025 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 2025 No-Action with Improvements conditions served as a base from which to determine impacts attributable to the BART Alternative. Without the improvements in place, level of service conditions with the BART Alternative would not accurately reflect impacts due to station traffic, but rather show problem areas under 2025 No-Action conditions compounded by the BART Alternative. Table 4.2-20 summarizes results of this exercise. Without mitigation, 59 intersections have an unacceptable level of service under 2025 No-Action conditions. This total reduces to 28 intersections with an unacceptable level of service under 2025 No-Action with Improvements.

Table 4.2-20: Existing, No-Action, and No-Action with Mitigation Conditions

Station	# of Study Intersections	# of 2000 Existing Intersections with Unacceptable LOS [1]	# of 2025 Intersections with Unacceptable LOS [1]	# of 2025 Intersections with Possible Mitigation	Remaining # of 2025 Intersections with Unacceptable LOS [1]
South Calaveras Future	15	3	8	7	1
Montague/Capitol	19 [2]	8	14	5	9
Berryessa	12	0	4	2	2
Alum Rock	19	0	8	3	5
Diridon/Arena	33	0	9	5	4
Santa Clara	23	6	16	9	7
Total	**121**	**17**	**59**	**31**	**28**

Notes:
[1] LOS E or F for a local intersection, LOS F for a CMP intersection
[2] Two of the intersections analyzed for the Montague/Capitol Station are also analyzed for the South Calaveras Future Station.
Source: Hexagon Transportation Consultants, Inc., traffic impact analysis reports, 2003.

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.

4.2.6.5 2025 Baseline Alternative Traffic Level of Service, Impacts, and Mitigation Measures

Because the only new facilities associated with the Baseline Alternative are three bus freeway ramps, the freeway and local intersection levels of service are expected to approximate those of the No-Action Alternative in 2025. Consequently, no need for mitigation is anticipated.

4.2.6.6 2025 BART Alternative Traffic Level of Service, Impacts, and Mitigation Measures

This section provides an analysis of the traffic level of service, impacts, and mitigations measures for the BART Alternative and the MOS scenarios. Freeways segments were evaluated, along with the intersections located within the BART Alternative station areas. For the most part, the MOS scenarios have the same level of service, impacts, and proposed mitigation measures as the BART Alternative, with the exception of intersections near the Berryessa and Alum Rock stations.

Freeways

Year 2025 BART Alternative traffic volumes for the subject freeway segments were obtained from the traffic model. The number of freeway segments projected to experience an unacceptable level of service of LOS F out of the total freeway segments analyzed was as follows, by station area:

- Montague/Capitol 13 of 20
- Berryessa 8 of 10
- Alum Rock 12 of 20
- Diridon/Arena 16 of 18
- Santa Clara 24 of 26

A summary of the station area analysis results is presented by Table 4.2-18, which includes all links projected to experience traffic impacts from the BART Alternative as well as some that improved level of service with the BART Alternative. Based on the summary of impacts in Table 4.2-18, the 2025 BART Alternative 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 Alternative and No-Action conditions, the BART Alternative improves the traffic volumes/conditions in some segments. Even though it does impact certain other segments near the station areas, the effects are marginal. The level of service is projected to deteriorate from LOS C to LOS D in only two segments. For all other segments, the level of service remains the same. The traffic density, the primary measure of level of service (Table 4.2-18), is lower under the BART Alternative for 22 of the 29 segments displayed. Thus, BART has a beneficial effect on freeway traffic overall.

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 No-Action, the BART Alternative produces the greatest amount of trips removed from roadways--over seven times the amount of peak-period trips removed under the Baseline Alternative (3,600). 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. The Baseline

Alternative was much less effective at removing peak-hour vehicles crossing the County line, with about 100 vehicles or less than 0.5 percent projected to be removed in 2025.

Intersections

Table 4.2-21 summarizes the overall impact of the BART Alternative on study intersections. By the above impact criteria, 30 of the 121 study intersections would be affected in 2025. This total accounts for intersections assumed to have been mitigated, if possible, for other traffic growth projected by the model. Of the 30 intersections, there appear to be feasible mitigation measures for 13 intersections. That leaves 17 intersections impacted by BART station traffic without feasible mitigation measures due to physical constraints. The following sections discuss these impacts in more detail and describe the proposed mitigation measures. Because the mitigation analysis year is 2025, actual implementation of the mitigation measures will take a long period of monitoring and assessing the current need for the improvements as part of a long-term co-operative relationship between BART and local agencies. In addition, on-going and future studies may result in modified improvements for the mitigation of BART Alternative impacts.

Table 4.2-21: BART Alternative Peak Hour Intersection Impact Summary

Station	# of Study Intersections	# of Impacted Intersections	# of Intersections Mitigated	# of Intersections with no Feasible Mitigation
South Calaveras Future	15	5	1	4
Montague/Capitol	19 [1]	3	0	3
Berryessa	12	2	1	1
Alum Rock	19	4	3	1
Diridon/Arena	33	9	5	4
Santa Clara	23	7	3	4
Total	**121**	**30**	**13**	**17**

Note:
[1] Two of the intersections analyzed for the Montague/Capitol Station are also analyzed for the South Calaveras Future Station.
Source: Hexagon Transportation Consultants, Inc., traffic impact analysis reports, 2003.

City of Fremont

There are no intersection impacts from the BART Alternative in the City of Fremont. The Sno-boy facility is projected to bring an average of 16 and a peak of 25 trucks a day into the area north of Warm Springs. This low volume of trucks in this existing industrial area would not constitute a traffic impact.

City of Milpitas

Intersection impacts for the City of Milpitas are analyzed for two scenarios. The first assumes that both the South Calaveras Future Station and the Montague/Capitol Station are built. The second assumes that only the Montague/Capitol Station is built.

Level of Service with South Calaveras Future Station (Two Stations Built)

The results of the level of service analysis under project conditions with the South Calaveras Future Station are shown in Figure 4.2.1. The results show that, measured against applicable level of service

standards, 13 of the signalized study intersections would operate at an unacceptable LOS E or worse under project conditions as identified below. Note that of the 13 signalized intersections projected to operate at LOS E or LOS F only 8 would be adversely impacted by the project during at least one of the peak hours according to impact criteria. The 13 signalized study intersections include:

South Calaveras Future Station

- Calaveras Boulevard and Abel Street* (Impact: AM only) (*Map location #3*)
- Calaveras Boulevard and Milpitas Boulevard* (Impact: PM only) (*Map location #4*)
- Calaveras Boulevard and Park Victoria Drive (Impact: PM only) (*Map location #6*)
- Milpitas Boulevard and Jacklin Road (Impact: PM only) (*Map location #7*)
- Milpitas Boulevard and Montague Expressway* (Impact: PM only) (*Map location #11*)

Montague/Capitol Station

- Great Mall Parkway and Montague Expressway* (*Map location #1*)
- Great Mall Parkway and Abel Street (Impact: AM only) (*Map location #5*)
- Great Mall Parkway and I-880 NB ramps (*Map location #6*)
- Abel Street and Capitol Avenue (*Map location #9*)
- Milpitas Boulevard and Montague Expressway* (Impact: PM only) (*Map location #13*)
- Landess Avenue and Dempsey Road (Impact: AM only) (*Map location #14*)
- Landess Avenue and Park Victoria Drive (*Map location #15*)
- Montague Expressway and Old Oakland/Main Street* (*Map location #17*)

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

Impacts and Mitigation Measures with South Calaveras Future Station (Two Stations Built)

The intersection impacts and recommended mitigation measures associated with the construction of the South Calaveras Future Station are described below. Table 4.2-21 provides an overall summary for the stations. Intersections for which feasible mitigation measures are not possible and intersections where feasible mitigation measures do not improve the intersection to acceptable levels are also discussed and identified on Figure 4.2-1.

South Calaveras Future Station

Calaveras Boulevard and Abel Street* (No Feasible Mitigation) (*Map location #3*)

Impact: The level of service would be LOS E during the AM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS F under 2025 BART Alternative conditions. This constitutes an adverse impact by CMP standards.

* Indicates a Congestion Management Program Intersection.

Mitigation Measure: No further feasible improvements can be made beyond those described for 2025 No-Action conditions to mitigate project impacts. The necessary addition of a southbound free-right-turn to mitigate project impacts would require the widening of Calaveras Boulevard to four lanes in the westbound direction. The widening of Calaveras Boulevard to this extent is not feasible due to ROW constraints.

Calaveras Boulevard and Milpitas Boulevard* (No Feasible Mitigation) (*Map location #4*)

Impact: The level of service would be LOS E during the PM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS F under 2025 BART Alternative conditions. This constitutes an adverse impact by CMP standards.

Mitigation Measure: No further feasible improvements can be made beyond those described for 2025 No-Action conditions to mitigate project impacts. The addition of a third eastbound lane and a northbound left-turn lane to mitigate project impacts is not feasible due to ROW constraints.

Calaveras Boulevard and Park Victoria Drive (*Map location #6*)

Impact: The level of service would be LOS D during the PM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS E under 2025 BART Alternative conditions. This constitutes an adverse impact by City of Milpitas standards.

Mitigation Measure: The necessary improvement to mitigate the project impact at this intersection would consist of the addition of a second southbound left-turn lane. The implementation of this improvement would improve intersection level of service to LOS D.

Milpitas Boulevard and Jacklin Road (No Feasible Mitigation) (*Map location #7*)

Impact: The level of service would be LOS D during the PM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS E under 2025 BART Alternative conditions. This constitutes an adverse impact by City of Milpitas standards.

Mitigation Measure: No further feasible improvements can be made beyond those described for 2025 No-Action conditions to mitigate project impacts. The addition of a second southbound left-turn lane is not feasible due to ROW constraints.

Milpitas Boulevard and Montague Expressway* (No Feasible Mitigation) (*Map location #11*)

Impact: The level of service would be LOS F under 2025 No-Action with Improvements conditions and the intersection would experience an increase in critical-movement delay of four or more seconds and an increase in the V/C of 0.01 or more during the PM peak hour under 2025 BART Alternative conditions. This constitutes an adverse impact by CMP standards.

Mitigation Measure: As identified for 2025 No-Action conditions, there are no feasible improvements, beyond those planned, which can be made at this intersection. The required widening of Montague Expressway is not feasible due to ROW constraints.

* Indicates a Congestion Management Program Intersection.

Montague/Capitol Station

Great Mall Parkway and Abel Street (No Feasible Mitigation) (*Map location #5*)

Impact: The level of service would be LOS D during the AM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS E under 2025 BART Alternative conditions. This constitutes an adverse impact by City of Milpitas standards.

Mitigation Measure: No further feasible improvements can be made beyond those described for 2025 No-Action conditions to mitigate project impacts. Right-of-way constraints along Great Mall Parkway prohibit the necessary widening to accommodate a southbound free-right-turn-lane from Abel Street to mitigate project impacts.

Milpitas Boulevard and Montague Expressway* (No Feasible Mitigation) (*Map location #13*)

Impact: The level of service would be LOS F under 2025 No-Action with Improvements conditions and the intersection would experience an increase in critical-movement delay of four or more seconds and an increase in the V/C of 0.01 or more during the PM peak hour under 2025 BART Alternative conditions. This constitutes an adverse impact by CMP standards.

Mitigation Measure: As identified for 2025 No-Action conditions, there are no feasible improvements, beyond those planned, which can be made at this intersection. The required widening of Montague Expressway is not feasible due to ROW constraints.

Landess Avenue and Dempsey Road (No Feasible Mitigation) (*Map location #14*)

Impact: The level of service would be LOS E during the AM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS F under 2025 BART Alternative conditions. This constitutes an adverse impact by City of Milpitas standards.

Mitigation Measure: No further feasible improvements can be made beyond those described for 2025 No-Action conditions to mitigate project impacts. The necessary improvement consists of the addition of a fourth westbound lane on Landess Avenue, which is not feasible due to ROW constraints.

Level of Service with Montague/Capitol Station (One Station Only)

Figure 4.2-2 illustrates the level of service conditions under the BART Alternative for only the Montague/Capitol Station. The results show that, measured against applicable level of service standards, nine of the signalized study intersections would operate at an unacceptable LOS E or worse under project conditions. Note that, of the nine signalized intersections projected to operate at LOS E or LOS F, only three would be adversely impacted by the project during at least one of the peak hours according to adverse impact criteria. The nine signalized study intersections include:

- Great Mall Parkway and Montague Expressway* (*Map location #1*)
- Great Mall Parkway and Abel Street (Impact: AM only) (*Map location #5*)
- Great Mall Parkway and I-880 NB ramps (*Map location #6*)

* Indicates a Congestion Management Program Intersection.

- Abel Street and Capitol Avenue (*Map location #9*)
- Milpitas Boulevard and Montague Expressway* (Impact: AM and PM) (*Map location #13*)
- Landess Avenue and Dempsey Road (Impact: AM only) (*Map location #14*)
- Landess Avenue and Park Victoria Drive (*Map location #15*)
- Montague Expressway and Old Oakland/Main Street* (*Map location #17*)
- Montague Expressway and Trade Zone Boulevard* (*Map location #18*)

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

Impacts and Mitigation Measures with Montague/Capitol Station (One Station Only)

The intersection impacts and recommended mitigation measures associated with the Montague/Capitol Station are described below. There are no feasible improvements for any of the intersections identified as being impacted by the project. The intersections are identified on Figure 4.2-2.

Great Mall Parkway and Abel Street (No Feasible Mitigation) (*Map location #5*)

Impact: The level of service would be LOS D during the AM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS E under 2025 BART Alternative conditions. This constitutes an adverse impact by City of Milpitas standards.

Mitigation Measure: No further feasible improvements can be made beyond those described for 2025 No-Action conditions to mitigate project impacts. Right-of-way constraints along Great Mall Parkway prohibit the necessary widening to accommodate a southbound free-right-turn lane from Abel Street to mitigate project impacts.

Milpitas Boulevard and Montague Expressway* (No Feasible Mitigation) (*Map location #13*)

Impact: The level of service would be LOS F under 2025 No-Action with Improvements conditions and the intersection would experience an increase in critical-movement delay of four or more seconds and an increase in the V/C of 0.01 or more during both the AM and PM peak hours under 2025 BART Alternative conditions. This constitutes an adverse impact by CMP standards.

Mitigation Measure: As identified for 2025 No-Action conditions, there are no feasible improvements beyond those planned, which can be made at this intersection. The required widening of Montague Expressway is not feasible due to ROW constraints.

Landess Avenue and Dempsey Road (No Feasible Mitigation) (*Map location #14*)

Impact: The level of service would be LOS E during the AM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS F under 2025 BART Alternative conditions. This constitutes an adverse impact by City of Milpitas standards.

Mitigation Measure: No further feasible improvements can be made beyond those described for 2025 No-Action conditions to mitigate project impacts. The necessary improvement consists of the addition of a fourth westbound lane on Landess Avenue, which is not feasible due to ROW constraints.

City of San Jose

Level of Service with Berryessa Station

The results of the level of service analysis under project conditions for the Berryessa Station are shown in Figure 4.2-3. The results show that, measured against applicable level of service standards, three of the signalized study intersections would operate at an unacceptable level under project conditions. Note that of the three signalized intersections projected to operate at unacceptable levels only two would be adversely impacted by the project during at least one of the peak hours according to adverse impact criteria. The three signalized study intersections include:

- Berryessa Road and Lundy Avenue* (*Map location #3*)
- Hedding Street and 13th Street (Impact: AM only) (*Map location #6*)
- Oakland Road and Brokaw Road* (Impact: PM only) (*Map location #10*)

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

Impacts and Mitigation Measures with Berryessa Station

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

Hedding Street and 13th Street (*Map location #6*)

Impact: The level of service would be LOS D during the AM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS E under 2025 BART Alternative conditions. This constitutes an adverse impact by City of San Jose standards. Under MOS-1E, the level of service would return to No-Action conditions since the Berryessa Station would be deferred.

Mitigation Measure: The necessary improvement to mitigate the project impact at this intersection will consist of the addition of a second westbound left-turn lane. The implementation of this improvement will improve intersection level of service to LOS D. This mitigation measure would not be necessary for MOS-1E.

Oakland Road and Brokaw Road* (No Feasible Mitigation) (*Map location #10*)

Impact: The level of service would be LOS D during the PM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS F under 2025 BART Alternative conditions. This constitutes an adverse impact by CMP standards. Under MOS-1E, the level of service would return to No-Action conditions since the Berryessa Station would be deferred.

Mitigation Measure: No further feasible improvements can be made to mitigate project impacts. The necessary improvements include the widening of Brokaw Road to four lanes in each direction and the addition of third left-turn lanes on Brokaw Road. The widening of Brokaw Road is not feasible due to ROW constraints. The addition of left-turn lanes along Brokaw Road would require

* Indicates a Congestion Management Program Intersection.

the widening of Oakland road to three lanes to receive left-turn lanes. No mitigation would be necessary for MOS-1E.

Level of Service with Alum Rock Station

The results of the level of service analysis under project conditions are shown in Figure 4.2-4. The results show that, measured against applicable level of service standards, seven of the signalized study intersections would operate at an unacceptable level under project conditions. Note that, of the seven signalized intersections projected to operate at unacceptable levels, only four would be adversely impacted by the project during at least one of the peak hours according to impact criteria. The seven signalized study intersections include:

- Julian Street and 28th Street (Impact: PM only) (*Map location #2*)
- Julian Street and US 101 (Impact: PM only) (*Map location #3*)
- McKee Road and King Road (Impact: PM only) (*Map location #5*)
- Story Road and McLaughlin Avenue (*Map location #14*)
- Story Road and King Road (*Map location #15*)
- San Antonio Street and 24th Street (*Map location #16*)
- San Antonio Street and King Road (Impact: AM only) (*Map location #17*)

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

Impacts and Mitigation Measures with Alum Rock Station

The intersection impacts and recommended mitigation measures are described below. . Intersections for which feasible mitigation measures are not possible and intersections where feasible mitigation measures do not improve the intersection to acceptable levels are also discussed and identified in Figure 4.2-4.

Julian Street and 28th Street (*Map location #2*)

Impact: The level of service would be LOS D during the PM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS F under the 2025 BART Alternative and MOS-1E. This constitutes an adverse impact by City of San Jose standards.

Mitigation Measure: The necessary improvements to mitigate the project impact at this intersection will consist of the addition of exclusive northbound and eastbound right-turn lanes, exclusive southbound and eastbound left-turn lanes, and a second westbound left-turn lane. The implementation of these improvements will improve intersection level of service to LOS C. However, the intersection would only improve to LOS D under MOS-1E due to the added kiss-and-ride trips to the Alum Rock Station.

Julian Street and US 101 (*Map location #3*)

Impact: The level of service would be LOS C during the PM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS F under 2025 BART Alternative conditions. This constitutes an adverse impact by City of San Jose standards.

Mitigation Measure: The necessary improvements to mitigate the project impact at this intersection will consist of the addition of a second westbound left-turn lane and exclusive eastbound

right-turn lane. The implementation of these improvements will improve intersection level of service to LOS B.

McKee Road and King Road (No Feasible Mitigation) (*Map location #5*)

Impact: The level of service would be LOS E during the PM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS F under 2025 BART Alternative conditions. This constitutes an adverse impact by City of San Jose standards.

Mitigation Measure: No further feasible improvements can be made beyond those described for 2025 No-Action conditions to mitigate project impacts. Right-of-way constraints along McKee Road prohibit its widening to four lanes in each direction to mitigate project impacts.

San Antonio Street and King Road (*Map location #17*)

Impact: The level of service would be LOS D during the AM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS E under 2025 BART Alternative conditions. This constitutes an adverse impact by City of San Jose standards.

Mitigation Measure: The necessary improvement to mitigate the project impact at this intersection will consist of the addition of a second southbound left-turn lane. The implementation of this improvement will improve intersection level of service to LOS D.

Level of Service with Diridon/Arena Station

The results of the level of service analysis under project conditions are shown in Figure 4.2-5. The results show that, measured against applicable level of service standards, nine of the signalized study intersections would operate at an unacceptable level under project conditions. All nine signalized intersections projected to operate at unacceptable levels would be adversely impacted by the project during at least one of the peak hours according to adverse impact criteria. The nine signalized study intersections include:

- Santa Clara Street and Autumn Street* (Impact: AM only) (*Map location #5*)
- San Carlos Street and Meridian Avenue (Impact: PM only) (*Map location #10*)
- San Carlos Street and Lincoln Avenue (Impact: PM only) (*Map location #12*)
- San Carlos Street and Bird Avenue* (Impact: AM and PM) (*Map location #13*)
- San Carlos Street and Almaden Boulevard* (Impact: PM only) (*Map location #16*)
- San Carlos Street and Market Street* (Impact: PM only) (*Map location #17*)
- Park Avenue and Race Street (Impact: AM and PM) (*Map location #18*)
- Almaden Boulevard and San Fernando Street (Impact: PM only) (*Map location #25*)
- Auzerais Avenue and Delmas Avenue (Impact: PM only) (*Map location #29*)

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

* Indicates a Congestion Management Program Intersection.

Impacts and Mitigation Measures with Diridon/Arena Station

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

Santa Clara Street and Autumn Street* (*Map location #5*)

Impact: The level of service would be LOS D during the AM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS F under 2025 BART Alternative conditions. This constitutes an adverse impact by CMP standards.

Mitigation Measure: The necessary improvement to mitigate the project impact at this intersection will consist of the conversion of the northbound through lane to a shared through-left-turn lane. The implementation of this improvement will improve intersection level of service to LOS D.

San Carlos Street and Meridian Avenue (*Map location #10*)

Impact: The level of service would be LOS D during the PM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS E under 2025 BART Alternative conditions. This constitutes an adverse impact by City of San Jose standards.

Mitigation Measure: The necessary improvement to mitigate the project impact at this intersection will consist of the addition of an exclusive eastbound right-turn lane. The implementation of this improvement will improve intersection level of service to LOS D.

San Carlos Street and Lincoln Avenue (*Map location #12*)

Impact: The level of service would be LOS D during the PM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS E under 2025 BART Alternative conditions. This constitutes an adverse impact by City of San Jose standards.

Mitigation Measure: The necessary improvement to mitigate the project impact at this intersection will consist of the addition of a second northbound left-turn lane. The implementation of this improvement will improve intersection level of service to LOS D.

San Carlos Street and Bird Avenue* (*Map location #13*)

Impact: The level of service would be LOS E during both the AM and PM peak hours under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS F during both peak hours under 2025 BART Alternative conditions. This constitutes an adverse impact by CMP standards.

Mitigation Measure: The necessary improvement to mitigate the project impact at this intersection will consist of the addition of second eastbound and westbound left-turn lanes. The implementation of this improvement will improve intersection level of service to LOS E.

* Indicates a Congestion Management Program Intersection.

San Carlos Street and Almaden Boulevard* (No Feasible Mitigation) (*Map location #16*)

Impact: The level of service would be LOS F under 2025 No-Action with Improvements conditions and the intersection would experience an increase in critical-movement delay of four or more seconds and an increase in the V/C of 0.01 or more during the PM peak hour under 2025 BART Alternative conditions. This constitutes an adverse impact by CMP standards.

Mitigation Measure: No further feasible improvements can be made beyond those described for 2025 No-Action conditions to mitigate project impacts. Right-of-way constraints along Almaden Boulevard prohibit the widening of Almaden Boulevard to the necessary four lanes in each direction to mitigate project impacts.

San Carlos Street and Market Street* (No Feasible Mitigation) (*Map location #17*)

Impact: The level of service would be LOS E during the PM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS F under 2025 BART Alternative conditions. This constitutes an adverse impact by CMP standards.

Mitigation Measure: No further feasible improvements can be made beyond those described for 2025 No-Action conditions to mitigate project impacts. Right-of-way constraints along San Carlos Street prohibit the widening of San Carlos Street to the necessary three lanes in each direction to mitigate project impacts.

Park Avenue and Race Street (No Feasible Mitigation) (*Map location #18*)

Impact: The level of service would be LOS F under 2025 No-Action with Improvements conditions and the intersection would experience an increase in critical-movement delay of four or more seconds and an increase in the V/C of 0.01 or more during the PM peak hour under 2025 BART Alternative conditions. This constitutes an adverse impact by City of San Jose standards.

Mitigation Measure: As identified for 2025 No-Action conditions, there are no feasible improvements that can be made at this intersection. The required widening of Park Avenue and Race Street is not feasible due to ROW constraints.

Almaden Boulevard and San Fernando Street (*Map location #25*)

Impact: The level of service would be LOS C during the PM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS E under 2025 BART Alternative conditions. This constitutes an adverse impact by City of San Jose standards.

Mitigation Measure: The necessary improvement to mitigate the project impact at this intersection will consist of the addition of a second southbound left-turn lane. The implementation of this improvement will improve intersection level of service to LOS C.

Auzerais Avenue and Delmas Avenue (No Feasible Mitigation) (*Map location #29*)

Impact: The level of service would be LOS F under 2025 No-Action with Improvements conditions and the intersection would experience an increase in critical-movement delay of four or more seconds and an increase in the V/C of 0.01 or more during the PM peak hour under 2025 BART Alternative conditions. This constitutes an adverse impact by City of San Jose standards.

Mitigation Measure: No further feasible improvements can be made beyond those described for 2025 No-Action conditions to mitigate project impacts. Necessary improvements include the

widening of the SR 87 on-ramp. The widening will be ineffective operationally due to ramp metering and congested conditions on SR 87 and is considered infeasible.

City of Santa Clara

Level of Service with Santa Clara Station

The results of the level of service analysis under 2025 BART Alternative conditions are shown in Figure 4.2-6. The results show that, measured against applicable level of service standards, ten of the signalized study intersections would operate at an unacceptable level under 2025 BART Alternative conditions. Note that, of the 10 signalized intersections projected to operate at unacceptable levels, only seven would be adversely impacted by the project during at least one of the peak hours according to impact criteria: The ten signalized study intersections include:

- El Camino Real and San Tomas Expressway* (Impact: AM and PM) (*Map location #1*)
- El Camino Real and Monroe Street* (Impact: AM only) (*Map location #2*)
- Lafayette Street and Central Expressway* (Impact: PM only) (*Map location #6*)
- Coleman Avenue and Brokaw Road (Impact: PM only) (*Map location #12*)
- Coleman Avenue and I-880 SB ramps* (*Map location #14*)
- Central Expressway and De La Cruz Boulevard* (Impact: PM only) (*Map location #15*)
- Benton Street and Monroe Street (*Map location #18*)
- Homestead Road and Monroe Street (Impact: PM only) (*Map location #20*)
- Monroe Street and San Tomas Expressway* (Impact: AM only) (*Map location #21*)
- De La Cruz Boulevard and Martin Avenue (*Map location #23*)

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

Impact and Mitigation Measures with Santa Clara Station

The intersection impacts and recommended mitigation measures are described below. Intersections for which feasible mitigation measures are not possible and intersections where feasible mitigation measures do not improve the intersection to acceptable levels are also discussed and identified on Figure 4.2-6.

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

Impact: The level of service would be LOS F under 2025 No-Action with Improvements conditions and the intersection would experience an increase in critical-movement delay of four or more seconds and an increase in the V/C of 0.01 or more during both the AM and PM peak hours under 2025 BART Alternative conditions. This constitutes an adverse impact by CMP standards.

Mitigation Measure: As identified for 2025 No-Action conditions, there are no feasible improvements that can be made at this intersection beyond the planned county widening of San

* Indicates a Congestion Management Program Intersection.

Thomas Expressway to four lanes in each direction. Further widening of San Thomas Expressway is infeasible due to ROW constraints.

El Camino Real and Monroe Street* (*Map location #2*)

Impact: The level of service would be LOS E during the AM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS F under 2025 BART Alternative conditions. This constitutes an adverse impact by CMP standards.

Mitigation Measure: The necessary improvement to mitigate the project impact at this intersection will consist of the addition of third eastbound and westbound through lanes. The implementation of these improvements will improve intersection level of service to LOS E.

Lafayette Street and Central Expressway* (No Feasible Mitigation) (*Map location #6*)

Impact: The level of service would be LOS E during PM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS F under 2025 BART Alternative conditions. This constitutes an adverse impact by CMP standards.

Mitigation Measure: No further feasible improvements can be made beyond those described for 2025 No-Action conditions to mitigate project impacts. Further widening of Central Expressway is not feasible due to ROW constraints.

Coleman Avenue and Brokaw Road (*Map location #12*)

Impact: The level of service would be LOS D during the PM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS F under 2025 BART Alternative conditions. This constitutes an adverse impact by City of Santa Clara standards.

Mitigation Measure: The necessary improvement to mitigate the project impact at this intersection will consist of the addition of a second eastbound left-turn lane. The implementation of this improvement will improve intersection level of service to LOS D.

Central Expressway and De La Cruz Boulevard* (*Map location #15*)

Impact: The level of service would be LOS E during the PM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS F under 2025 BART Alternative conditions. This constitutes an adverse impact by CMP standards.

Mitigation Measure: The necessary improvement to mitigate the project impact at this intersection will consist of the addition of a third eastbound left-turn lane. The implementation of this improvement will improve intersection level of service to LOS E.

Homestead Road and Monroe Street (No Feasible Mitigation) (*Map location #20*)

Impact: The level of service would be LOS C during the PM peak hour under 2025 No-Action with Improvements conditions and the intersection would degrade to LOS E under 2025 BART Alternative conditions. This constitutes an adverse impact by City of Santa Clara standards.

Mitigation Measure: As identified for 2025 No-Action conditions, there are no feasible improvements that can be made at this intersection due to ROW constraints and residential development along both Monroe Street and Homestead Road.

Monroe Street and San Tomas Expressway* (No Feasible Mitigation) (*Map location #21*)

Impact: The level of service would be LOS F under 2025 No-Action with Improvements conditions and the intersection would experience an increase in critical-movement delay of four or more seconds and an increase in the V/C of 0.01 or more during the AM peak hour under 2025 BART Alternative conditions. This constitutes an adverse impact by CMP standards.

Mitigation Measure: As identified for 2025 No-Action conditions, there are no feasible improvements that can be made at this intersection beyond the planned county widening of San Thomas Expressway to four lanes in each direction. Further widening of San Thomas Expressway is not feasible due to ROW constraints.

* Indicates a Congestion Management Program Intersection.

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