4.2 TRANSPORTATION AND TRANSIT

4.2.1 INTRODUCTION

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

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


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

4.2.2.1 Existing Conditions

RAIL AND BUS SERVICES

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

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

VTA opened its new Vasona light rail extension in October 2005. This line was connected to the Tasman West line and provides contiguous service between downtown Mountain View and downtown Campbell. Trains on the Winchester to Mountain View line operate with the Santa Teresa to Alum Rock line on 1st Street between downtown San Jose and Tasman Drive.

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

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

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

4.2.2.2 Project Impacts and Mitigation Measures

2030 PROGRAMMED IMPROVEMENTS

New transit services and capital projects programmed for the Corridor in the Regional Transportation Plan (RTP) are listed below. The projects include a BART Extension to Warm Springs, VTA LRT extensions and Bus Rapid Transit (BRT) lines, and commuter rail upgrades. Chapter 3.0, Alternatives, of the FEIR provided additional detail and service characteristics.

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

TABLE 4.2-1:

<table>
<thead>
<tr>
<th>OPERATOR</th>
<th>2006 BOARDINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BART</td>
<td>323,000</td>
</tr>
<tr>
<td>ACE Entire System</td>
<td></td>
</tr>
<tr>
<td>ACE</td>
<td>2,500</td>
</tr>
<tr>
<td>ACE Shuttles</td>
<td>690</td>
</tr>
<tr>
<td>SUBTOTAL</td>
<td>3,190</td>
</tr>
<tr>
<td>CAPITOLS</td>
<td>3,181</td>
</tr>
<tr>
<td>VTA LRT System</td>
<td></td>
</tr>
<tr>
<td>Santa Teresa / Alum Rock LRT (including Almaden LRT Shuttle)</td>
<td>18,500</td>
</tr>
<tr>
<td>Winchester / Downtown Mountain View LRT</td>
<td>8,700</td>
</tr>
<tr>
<td>SUBTOTAL</td>
<td>27,200</td>
</tr>
<tr>
<td>VTA Bus System</td>
<td></td>
</tr>
<tr>
<td>VTA Express</td>
<td>2,800</td>
</tr>
<tr>
<td>BRT/Limited</td>
<td>6,100</td>
</tr>
<tr>
<td>Local Bus</td>
<td>100,000</td>
</tr>
<tr>
<td>SUBTOTAL</td>
<td>108,900</td>
</tr>
<tr>
<td>VTA ENTIRE SYSTEM</td>
<td></td>
</tr>
<tr>
<td>Caltrain</td>
<td>30,000</td>
</tr>
<tr>
<td>AC Transit</td>
<td>215,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>710,471</td>
</tr>
</tbody>
</table>

Source: VTA, 2006
Travel demand forecasts, based on the 2030 transit network assumptions described above, have been developed for the Project. Forecasts include estimates of transit activity and trip-making in the Corridor. Table 4.2-2 summarizes study area transit projections for 2030 under the Without Project conditions. Transit trips on all transit operators in the study area are projected to grow approximately 50 percent between 2000 and 2030, increasing from 1.37 million in 2000 to 2.03 million in 2030. Transit trips between Alameda and Santa Clara counties are expected to increase by more than 400 percent over the same period, from about 9,300 per day to 38,700 per day. Systemwide BART trips are projected to increase from 335,600 to over 661,300.

New Linked Transit Trips

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

Total Average Weekday Boardings

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

| TABLE 4.2-2: |
| Projected Average Weekday Transit Trips—Without Project Conditions |
| TOTAL AVERAGE WEEKDAY TRIPS | 2000 | 2030 | % GROWTH |
| All Transit Operators in Area¹ | 1,366,511¹ | 2,025,905 | 48% |
| Between Alameda and Santa Clara Counties | 9,300² | 38,700 | 316% |
| BART Systemwide | 335,600³ | 661,316 | 97% |

¹ Includes total daily transit ridership for all the transit operators within the modeled area, including transit users coming over the Altamont Pass on either express buses.
² Estimated from model calibration data by VTA, 2005.
³ Estimated from No Project Model Forecast by Hexagon, Winter 2006.

Source: Travel Demand Forecasts, Hexagon Transportation Consultants, Inc., Fall 2006.
Average Weekday Transit Trips

As shown in Table 4.2-5, the Project with the Calaveras Station is projected to serve 103,661 average daily transit trips in 2030. Approximately 65,100 (63 percent) of these projected trips would be between other counties and Santa Clara County. The Project is also projected to serve 38,608 average weekday trips made completely within Santa Clara County. An estimated 96,783 (93 percent) of the Project’s 103,661 trips would be new trips on BART as a result of its service to and within Santa Clara County. The remaining 6,878 trips (7 percent) were projected to ride BART in the absence of an extension, but are now projected to be riding BART into Santa Clara County. However, the Project ridership within Santa Clara County also contributes to a projected decrease of 2,503 in VTA LRT ridership (3 percent).
Table 4.2-6 was developed from examining the projected change in transit ridership for the set of transit services most relevant to the study area (e.g., between Santa Clara County and southern Alameda County). The transit services used for this comparison include the “Valley” express buses, VTA express buses, VTA Light Rail, ACE, and BART. Table 4.2-6 presents the results by showing comparisons to Without Project ridership forecasts.

### TABLE 4.2-6:

<table>
<thead>
<tr>
<th>PERFORMANCE MEASURE</th>
<th>WITHOUT BART EXTENSION PROJECT</th>
<th>BART EXTENSION PROJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Weekday Riders</td>
<td>42,600</td>
<td>69,400</td>
</tr>
<tr>
<td>Change from Without BART Extension</td>
<td>N/A†</td>
<td>26,800</td>
</tr>
</tbody>
</table>

† N/A = Not Applicable

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

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

**Projected Ridership at Stations**

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

- South Calaveras (Future) – at Calaveras Boulevard (SR 237) and the rail ROW
- Montague/Capitol – at the rail ROW between Montague Expressway and Capitol Avenue
- Berryessa – at Berryessa Road and the rail ROW
- Alum Rock – at 28th Street between East Julian and East Santa Clara streets
- Downtown – at West Santa Clara Street between 1st Street and San Pedro Street
- Diridon/Arena – south of and parallel to West Santa Clara Street between Autumn and White Street and Diridon rail yard
- Santa Clara – at Benton Street/Brokaw Road between El Camino Real and Coleman Avenue
A comparison of the 2030 FEIR and SEIR riders by stations is provided in Table 4.2-7. As seen from the table, providing the one Downtown San Jose Station versus the two, the Civic Center/SJSU and Market Street stations, results in slightly lower total number of riders in the downtown area.

Table 4.2-8 shows the number of projected average weekday boardings and alightings at each planned station along the Project, including home-based work and non-work trips. Therefore, one rider could result in both a boarding and alighting at Project stations. The three highest-volume stations have more than 27,000 average weekday projected boardings and alightings each. These stations offer the best mode transfer opportunities to bus, light rail, and commuter rail services.

**TABLE 4.2-7:**

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

Source: Connetics 2006

**TABLE 4.2-8:**

<table>
<thead>
<tr>
<th>PROJECT STATIONS</th>
<th>HOME-BASED WORK</th>
<th>NON-WORK</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Calaveras</td>
<td>4,633</td>
<td>1,292</td>
<td>5,925</td>
</tr>
<tr>
<td>Montague</td>
<td>26,636</td>
<td>8,069</td>
<td>34,705</td>
</tr>
<tr>
<td>Berryessa</td>
<td>8,834</td>
<td>3,640</td>
<td>12,474</td>
</tr>
<tr>
<td>Alum Rock</td>
<td>12,374</td>
<td>4,125</td>
<td>16,499</td>
</tr>
<tr>
<td>Downtown</td>
<td>21,401</td>
<td>9,102</td>
<td>30,503</td>
</tr>
<tr>
<td>Diridon/Arena</td>
<td>9,164</td>
<td>5,613</td>
<td>14,777</td>
</tr>
<tr>
<td>Santa Clara</td>
<td>17,814</td>
<td>9,571</td>
<td>27,385</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100,856</td>
<td>41,412</td>
<td>142,268</td>
</tr>
</tbody>
</table>

Source: Travel Demand Forecasts, Hexagon Transportation Consultants, Inc., Fall 2006
Mode of Access at Stations

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

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

Person-Hours Saved

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

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

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

### TABLE 4.2-10:

<table>
<thead>
<tr>
<th>PERFORMANCE MEASURE</th>
<th>WITHOUT PROJECT</th>
<th>PROJECT</th>
<th>TRAVEL TIME SAVINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Travel Time (Hours)</td>
<td>9,159,530</td>
<td>9,090,569</td>
<td>68,961</td>
</tr>
</tbody>
</table>

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

### TABLE 4.2-11:

<table>
<thead>
<tr>
<th>FROM</th>
<th>TO</th>
<th>DRIVE-ALONE</th>
<th>SHARED-RIDE</th>
<th>TRANSIT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>WITHOUT</td>
<td>PROJECT</td>
<td>WITHOUT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PROJECT</td>
<td>PROJECT</td>
<td>PROJECT</td>
</tr>
<tr>
<td>North Milpitas Blvd</td>
<td>Downtown San Jose</td>
<td>23</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Hostetter-Berryessa</td>
<td>Downtown San Jose</td>
<td>17</td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>East San Jose</td>
<td>Downtown San Jose</td>
<td>22</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>South Fremont</td>
<td>Downtown San Jose</td>
<td>59</td>
<td>54</td>
<td>40</td>
</tr>
<tr>
<td>Newark</td>
<td>Downtown San Jose</td>
<td>67</td>
<td>63</td>
<td>47</td>
</tr>
<tr>
<td>Union City</td>
<td>Downtown San Jose</td>
<td>93</td>
<td>88</td>
<td>72</td>
</tr>
<tr>
<td>Pleasanton</td>
<td>Downtown, San Jose</td>
<td>141</td>
<td>135</td>
<td>101</td>
</tr>
</tbody>
</table>

Source: Travel Demand Forecasts, Hexagon Transportation Consultants, Inc., Fall 2006
The BART Extension Project does provide a high-quality transit linkage between Alameda County and downtown San Jose, and Table 4.2-11 shows the associated travel time savings. The average transit travel time savings for all origin-destination pairs was projected to be about 26 minutes, with a maximum savings of 65 minutes. Notable transit travel time improvements are projected for transit trips to downtown San Jose from various points in Alameda County, including Fremont (65 minutes faster), Union City (26 minutes faster), and Newark (19 minutes faster). Travel times into the downtown are also projected to improve by 30 to 34 minutes from various points in northeastern Santa Clara County. Only the transit connection between Pleasanton in east Alameda County and downtown fails to show a material improvement in transit travel times; these origin-destination pairs are projected to be well served by express buses in the Without Project conditions.

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

### 4.2.2.3 Conclusion

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

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

Examples of transit ridership competition with the BART Extension Project include the ACE and Capitols, and to a lesser extent Caltrain. The Project is projected to reduce ridership by about 25 percent for all three of these existing rail services combined. However, because the Project would cause a projected 1.6 percent increase in overall VTA transit trips, 13.3 percent increase in BART systemwide ridership, and 5.5 percent increase in total transit trips, these effects are not considered significant impacts to transit use. Because there are no significant impacts to transit use under the BART Extension Project, no transit mitigation measures are proposed.

### 4.2.3 PARKING

#### 4.2.3.1 Existing Conditions

Much of the parking available around a ½-mile radius of each of the BART stations is in small private parking lots associated with businesses and offices. On-street parking is also available along the streets that surround the stations.

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

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

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

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

Without the South Calaveras Future Station, the park-and-ride demand for the Project is 11,699 spaces for the five stations with drive access. This includes 1,950 spaces shifted from the Alum Rock Station to Berryessa Station to address community concerns about site impacts at the Alum Rock Station. The Berryessa and Alum Rock Stations would have approximately 2,185 and 4,450 spaces, respectively, without the shift. The Santa Clara Station would have 1,730 spaces, Montague/Capitol 2,030, and Diridon/Arena 1,313 spaces.

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

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

### Table 4.2-12:

<table>
<thead>
<tr>
<th>STATION NAME</th>
<th>7 STATIONS</th>
<th>7 STATIONS + CALAVERAS</th>
<th>6 STATIONS</th>
<th>6 STATIONS + CALAVERAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Calaveras</td>
<td>0</td>
<td>990</td>
<td>0</td>
<td>1,253</td>
</tr>
<tr>
<td>Montague/Capitol</td>
<td>1,628</td>
<td>1,023</td>
<td>2,030</td>
<td>1,198</td>
</tr>
<tr>
<td>Berryessa</td>
<td>1,500</td>
<td>1,500</td>
<td>4,126</td>
<td>3,945</td>
</tr>
<tr>
<td>Alum Rock</td>
<td>3,500</td>
<td>3,500</td>
<td>2,500</td>
<td>2,500</td>
</tr>
<tr>
<td>Diridon/Arena</td>
<td>2,262</td>
<td>2,262</td>
<td>1,313</td>
<td>1,319</td>
</tr>
<tr>
<td>Santa Clara</td>
<td>1,067</td>
<td>1,067</td>
<td>1,730</td>
<td>1,699</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>9,957</strong></td>
<td><strong>10,342</strong></td>
<td><strong>11,699</strong></td>
<td><strong>11,914</strong></td>
</tr>
</tbody>
</table>

1 The Montague/Capitol station would only require 1,199 spaces if the South Calaveras Future Station is built. For the impact analysis, the worst case scenario was evaluated assuming approximately 2,000 parking spaces at the Montague BART station.
2 Include a shift of 1,950 spaces from Alum Rock to Berryessa Station.

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

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

4.2.4 PEDESTRIANS AND BICYCLES

4.2.4.1 Existing Conditions

MONTAGUE/CAPITOL STATION AREA

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

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

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

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

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

BERRYESSA STATION AREA

Pedestrian facilities in this study area and also the Alum Rock, Downtown San Jose and Diridon/Arena Stations consist primarily of sidewalks, pedestrian push buttons, and signal heads at intersections. With a few exceptions, sidewalks are found along virtually all previously described local roadways in the study area and along the local residential streets and collectors near the sites. There are several bicycle facilities in each of the station areas. Bicycle facilities include striped bike lanes on roadways; bike paths, which are separated from vehicle traffic and shared with pedestrians; and bicycle corridors, which are identified corridors between jurisdictions where it is desirable to implement bicycle facilities.
The Bay Ridge Trail: El Sombroso/Penitencia and Coyote Creek/Llagas Creek Trail travels along Coyote Creek in the vicinity of both the Berryessa and Alum Rock stations. This trail is for hiking, off-road bicycle, on-road bicycle, and equestrian use.

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

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

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

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

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

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

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

DOWNTOWN SAN JOSE AND DIRIDON/ARENA STATION AREAS

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

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

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

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

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

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

ALUM ROCK STATION AREA

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

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

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

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

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

### 4.2.4.2 Project Impacts and Mitigation Measures

**PEDESTRIANS**


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

**Design Change 40. Downtown San Jose Station.**

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

**Design Change 42. Diridon/Arena Station and Alignment.**

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

**Design Change 52. Santa Clara Station.**

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

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

**BICYCLES**

**Bike Lanes**

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

**Bicycle Parking**

BART and VTA transit station design guidelines require bicycle-parking facilities. The two sets of guidelines are different; therefore, for this study, both sets of guidelines were used to estimate the number of bicycle parking spaces that would be initially provided at each station. The more stringent (i.e., higher) value for each station is recommended for preliminary station design purposes. The actual number of bicycle parking spaces to be provided will be determined by the station design team based on these initial recommendations, but would also consider other factors such as available space within the station areas. The VTA bicycle parking design guidelines suggest that the initial supply of parking should be equal to 2 percent of the daily passenger boardings at each transit station, and then usage should be monitored and the amount of bicycle parking adjusted based on observed demand.

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

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

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

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

4.2.5.1 Existing Conditions

STREET AND HIGHWAY SYSTEM

The Corridor contains two major north-south regional freeways, I-880 and I-680, which parallel one another from southern Alameda County into northern Santa Clara County. The freeways are part of a more elaborate regional roadway system that converges in Santa Clara County around the San Jose Central Business District. Other freeways and expressways that traverse the study area include SR 237/Calaveras Boulevard, Montague Expressway, Guadalupe Parkway/SR 87, US 101, and Capitol Expressway. These existing roadways can be seen on Figure 2.3-1 in Chapter 2, Introduction. Major arterials, such as Great Mall Parkway, Tasman Drive, Hostetter Road/Murphy Avenue/Brokaw Road, Berryessa Road/Hedding Street, Mabury Road/Taylor Street, McKee Road/Julian Street, and Alum Rock Avenue/Santa Clara Street/The Alameda, traverse the study area from east to west. Major north-south streets within the study area include the 10th/11th Street couplet, 13th Street/Old Oakland Road, Coleman Avenue, and De La Cruz Boulevard. The key freeways and expressways are described in more detail below.

- I-880 extends in a north-south direction from its junction with I-280 near downtown San Jose to I-80 in Oakland. Within the study area, I-880 has six mixed-flow lanes in Santa Clara County.
- US 101 is an eight-lane freeway (three mixed-flow lanes and one HOV lane in each direction). US 101 extends northward through San Francisco and southward through Gilroy.
- I-680 is a six-to-eight-lane freeway providing regional access between its junction with I-280 and US 101 near downtown San Jose through the East Bay to its junction with I-80 in Fairfield.
- I-280 connects from US 101 in San Jose to I-80 in San Francisco. It is generally an eight-lane freeway in the vicinity of downtown San Jose. It has auxiliary lanes between some interchanges.
SR 237 is a six-lane freeway that extends in an east-west direction providing access between I-880 and US 101. Two of the six lanes are designated HOV lanes. Between I-880 and I-680, SR 237 is a four-to-six-lane signalized arterial.

SR 87 connects from SR 85 in south San Jose to US 101 near the SJIA. It is generally a four-lane freeway with auxiliary lanes near the I-280 interchange. The SR 87 HOV lane widening project, a project that will provide HOV lanes between Julian Street and SR 85, is currently being constructed. This project is expected to be completed in 2007.

San Tomas Expressway is a six-to-eight-lane expressway that is oriented in a north-south direction. It has two to three mixed-flow lanes and one reversible HOV lane (restricted hours only) in each direction of travel.

El Camino Real is a six-lane major arterial that is oriented in an east-west direction, extending westward from The Alameda towards Mountain View.

Montague Expressway is a six-lane expressway with full freeway interchanges at I-680 and I-880. There is a reversible HOV lane on Montague Expressway between South Milpitas Boulevard and De La Cruz Boulevard, which effectively gives three lanes in the westbound direction during the morning peak hours and three lanes eastbound direction during the evening peak hours.

Capitol Avenue is a north-south divided roadway that extends from Montague Expressway south through San Jose. Although the majority of Capitol Avenue is a four-lane divided roadway, some portions consist of six lanes. The VTA’s Capitol Corridor Light Rail line runs along Capitol Avenue with a station located at Montague Expressway and Capitol Avenue.

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

### EXISTING TRAFFIC VOLUMES AND LEVEL OF SERVICE

**Freeways**

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

#### TABLE 4.2-14:

<table>
<thead>
<tr>
<th>Freeway Segment Level of Service Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEVEL OF SERVICE</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>D</td>
</tr>
<tr>
<td>E</td>
</tr>
<tr>
<td>F</td>
</tr>
</tbody>
</table>

Intersections

Existing traffic volumes for 124 signalized intersections in the study area are documented in three traffic impact analysis reports addressing the station areas in the cities of Milpitas, San Jose, and Santa Clara. The Downtown San Jose Station area is omitted from the vehicle traffic analysis because it is planned to have no drive access. These intersections were selected by the local cities for analysis in the traffic study because of their concern regarding potential impacts. Some selected intersections are relatively far from the station sites, but were chosen because they were on anticipated station access traffic routes.

Intersection level of service was calculated

**TABLE 4.2-15:**

<table>
<thead>
<tr>
<th>STATION</th>
<th># OF STUDY INTERSECTIONS</th>
<th># OF 2005 EXISTING INTERSECTIONS WITH UNACCEPTABLE LOS¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Calaveras Future</td>
<td>36</td>
<td>2</td>
</tr>
<tr>
<td>Montague/Capitol</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Berryessa</td>
<td>19²</td>
<td>0</td>
</tr>
<tr>
<td>Alum Rock</td>
<td>34</td>
<td>0</td>
</tr>
<tr>
<td>Diridon/Arena</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>Santa Clara</td>
<td>124</td>
<td>4</td>
</tr>
</tbody>
</table>

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

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

**TABLE 4.2-16:**

<table>
<thead>
<tr>
<th>STATION</th>
<th># OF STUDY INTERSECTIONS</th>
<th># OF 2005 EXISTING INTERSECTIONS WITH UNACCEPTABLE LOS¹</th>
<th># OF 2030 INTERSECTIONS WITH UNACCEPTABLE</th>
<th># OF 2030 INTERSECTIONS WITH POSSIBLE MITIGATION</th>
<th>REMAINING # OF INTERSECTIONS WITH UNACCEPTABLE LOS¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Calaveras Future</td>
<td>36</td>
<td>2</td>
<td>24</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Montague/Capitol</td>
<td>12</td>
<td>0</td>
<td>10</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Berryessa</td>
<td>19²</td>
<td>0</td>
<td>12</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Alum Rock</td>
<td>34</td>
<td>0</td>
<td>19</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Diridon/Arena</td>
<td>23</td>
<td>2</td>
<td>19</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Santa Clara</td>
<td>124</td>
<td>4</td>
<td>84</td>
<td>32</td>
<td>52</td>
</tr>
</tbody>
</table>

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

*Source: Travel Demand Forecasts, Hexagon Transportation Consultants, Inc., 2006*
using the TRAFFIX software system, which is consistent with the *2000 Highway Capacity Manual.* Level of service at signalized intersections is based upon the average control delay experienced by vehicles at an intersection and is assigned a letter designation, ranging from LOS A to LOS F, corresponding to average delay. The level of service designations for signalized intersections are as follows:

<table>
<thead>
<tr>
<th>LOS</th>
<th>Average Vehicle Delay (seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>≤ 10.0</td>
</tr>
<tr>
<td>B</td>
<td>10.1 to 20.0</td>
</tr>
<tr>
<td>C</td>
<td>20.1 to 35.0</td>
</tr>
<tr>
<td>D</td>
<td>35.1 to 55.0</td>
</tr>
<tr>
<td>E</td>
<td>55.1 to 80.0</td>
</tr>
<tr>
<td>F</td>
<td>&gt; 80.0</td>
</tr>
</tbody>
</table>

LOS A describes traffic operations with very low delay and all intersection approaches open. LOS F describes failure conditions, with unacceptable delays to most vehicles, long queues, and stop-and-go flow. LOS F results when arrivals exceed the capacity of an intersection during a specified time period.

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

4.2.5.2 Project Impacts and Mitigation Measures

The intersection and freeway level of service thresholds for identifying when traffic impacts of the Project should be considered for possible mitigation were provided in Table 4-1. The criteria include both VTA and local city criteria. It should be noted that impacts of the Project are based on the addition of station traffic to 2030 Without Project conditions traffic volumes and compared to 2030 Without Project with Improvements conditions. The Project is said to create a significant impact if the criteria in Table 4-1 is exceeded. A significant impact is said to be satisfactorily mitigated when measures are implemented that would restore intersection levels of operation to Year 2030 Without Project with Improvements conditions or better.
### TABLE 4.2-12:

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

<table>
<thead>
<tr>
<th>FRWY.</th>
<th>SEGMENT</th>
<th>DIR.</th>
<th>PEAK HOUR</th>
<th>2000 EXISTING CONDITIONS</th>
<th>2030 WITHOUT PROJECT CONDITIONS</th>
<th>2030 BART EXTENSION PROJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>AVG. SPEED</td>
<td>VOLUME</td>
<td>DENSITY</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MILPITAS⁴</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-680</td>
<td>Hostetter to Capitol</td>
<td>NB AM</td>
<td>64</td>
<td>8,450</td>
<td>33.0</td>
<td>D</td>
</tr>
<tr>
<td>I-680</td>
<td>Capital to Montague</td>
<td>NB AM</td>
<td>65</td>
<td>7,540</td>
<td>29.0</td>
<td>D</td>
</tr>
<tr>
<td>I-680</td>
<td>Montague to Yosemite</td>
<td>NB AM</td>
<td>66</td>
<td>6,340</td>
<td>24.0</td>
<td>C</td>
</tr>
<tr>
<td>I-680</td>
<td>Yosemite to Calaveras</td>
<td>NB AM</td>
<td>57</td>
<td>7,780</td>
<td>39.0</td>
<td>D</td>
</tr>
<tr>
<td>I-680</td>
<td>Calaveras to Jacklin</td>
<td>NB AM</td>
<td>59</td>
<td>6,550</td>
<td>37.0</td>
<td>D</td>
</tr>
<tr>
<td>I-680</td>
<td>Jacklin to Scott Creek</td>
<td>NB AM</td>
<td>39</td>
<td>6,200</td>
<td>53.0</td>
<td>E</td>
</tr>
<tr>
<td>I-880</td>
<td>Brokaw to Montague</td>
<td>NB PM</td>
<td>65</td>
<td>5,850</td>
<td>30.0</td>
<td>D</td>
</tr>
<tr>
<td>I-880</td>
<td>Montague to Great Mall</td>
<td>NB AM</td>
<td>66</td>
<td>5,150</td>
<td>26.0</td>
<td>C</td>
</tr>
<tr>
<td>I-880</td>
<td>Great Mall to SR 237</td>
<td>NB PM</td>
<td>41</td>
<td>6,270</td>
<td>51.0</td>
<td>E</td>
</tr>
<tr>
<td>I-880</td>
<td>SR 237 to Dixon Landing</td>
<td>NB PM</td>
<td>15</td>
<td>5,130</td>
<td>95.0</td>
<td>F</td>
</tr>
<tr>
<td>I-880</td>
<td>Dixon Landing to SR 237</td>
<td>SB AM</td>
<td>65</td>
<td>7,020</td>
<td>30.0</td>
<td>D</td>
</tr>
<tr>
<td>I-880</td>
<td>SR 237 to Great Mall</td>
<td>SB PM</td>
<td>66</td>
<td>4,750</td>
<td>24.0</td>
<td>C</td>
</tr>
<tr>
<td>I-880</td>
<td>Great Mall to Montague</td>
<td>SB PM</td>
<td>39</td>
<td>6,200</td>
<td>53.0</td>
<td>E</td>
</tr>
<tr>
<td>I-880</td>
<td>Montague to Brokaw</td>
<td>SB PM</td>
<td>21</td>
<td>5,100</td>
<td>81.0</td>
<td>F</td>
</tr>
<tr>
<td>I-880</td>
<td>Scott Creek to Judd</td>
<td>SB PM</td>
<td>64</td>
<td>6,340</td>
<td>33.0</td>
<td>D</td>
</tr>
<tr>
<td>I-880</td>
<td>Judd to Alum Rock</td>
<td>SB PM</td>
<td>66</td>
<td>5,350</td>
<td>27.0</td>
<td>D</td>
</tr>
<tr>
<td>I-880</td>
<td>Alum Rock to Berryessa</td>
<td>SB PM</td>
<td>61</td>
<td>7,690</td>
<td>36.0</td>
<td>D</td>
</tr>
<tr>
<td>I-880</td>
<td>Berryessa to Montague</td>
<td>SB PM</td>
<td>30</td>
<td>7,680</td>
<td>64.0</td>
<td>F</td>
</tr>
<tr>
<td>I-880</td>
<td>Montague to Capital</td>
<td>SB PM</td>
<td>29</td>
<td>7,660</td>
<td>66.0</td>
<td>F</td>
</tr>
<tr>
<td>I-880</td>
<td>Capital to Hostetter</td>
<td>SB PM</td>
<td>17</td>
<td>6,120</td>
<td>90.0</td>
<td>F</td>
</tr>
</tbody>
</table>

### SAN JOSE

#### BERRYESSA STATION

<p>| US 101 | McKee to Mabury⁵ | NB AM | 16 | 4,420 | 92.0 | F | 16 | 10,342 | 184.7 | F | 16 | 9,934 | 177.4 | F |
| US 101 | Mabury to Oakland⁶ | NB AM | 16 | 5,040 | 80.0 | F | 16 | 10,571 | 188.8 | F | 16 | 10,236 | 182.8 | F |
| US 101 | Oakland to I-880 | NB AM | 21 | 5,040 | 80.0 | F | 21 | 10,842 | 147.5 | F | 21 | 10,165 | 138.3 | F |
| I-680 | Alum Rock to McKee | NB AM | 32 | 7,810 | 61.0 | F | 32 | 9,437 | 65.5 | F | 32 | 9,640 | 66.9 | F |
| I-680 | McKee to Berryessa | NB AM | 50 | 8,800 | 44.0 | D | 50 | 9,589 | 47.9 | E | 50 | 9,564 | 47.8 | E |
| I-680 | Berryessa to Hostetter | NB AM | 63 | 8,570 | 34.0 | D | 63 | 10,562 | 37.3 | D | 63 | 10,363 | 36.6 | D |
| I-680 | Hostetter to Berryessa | SB PM | 27 | 7,340 | 68.0 | F | 27 | 11,678 | 96.1 | F | 27 | 11,424 | 94.0 | F |
| I-680 | Berryessa to McKee | SB PM | 37 | 8,140 | 55.0 | E | 37 | 10,960 | 74.1 | F | 37 | 10,828 | 73.2 | F |
| I-680 | McKee to Alum Rock | SB PM | 39 | 8,270 | 53.0 | E | 39 | 10,731 | 61.1 | F | 39 | 10,499 | 59.8 | F |</p>
<table>
<thead>
<tr>
<th>FRWY.</th>
<th>SEGMENT</th>
<th>DIR.</th>
<th>PEAK HOUR</th>
<th>2000 EXISTING CONDITIONS</th>
<th>2030 WITHOUT PROJECT CONDITIONS</th>
<th>2030 BART EXTENSION PROJECT</th>
</tr>
</thead>
<tbody>
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<td>2000 VOLUME</td>
<td>DENSITY</td>
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<td>I-880 to Oakland</td>
<td>SB</td>
<td>PM</td>
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</tr>
<tr>
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<td>Oakland to Milpury</td>
<td>SB</td>
<td>PM</td>
<td>32</td>
<td>5,950</td>
<td>62.0</td>
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<tr>
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<td>Milpury to McKee</td>
<td>SB</td>
<td>PM</td>
<td>19</td>
<td>4,850</td>
<td>85.0</td>
</tr>
<tr>
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<td>Tully to Story</td>
<td>NB</td>
<td>AM</td>
<td>51</td>
<td>6,580</td>
<td>43.0</td>
</tr>
<tr>
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<td>Story to I-280</td>
<td>NB</td>
<td>AM</td>
<td>67</td>
<td>3,620</td>
<td>18.0</td>
</tr>
<tr>
<td>US 101</td>
<td>I-280 to Santa Clara</td>
<td>NB</td>
<td>AM</td>
<td>29</td>
<td>5,740</td>
<td>66.0</td>
</tr>
<tr>
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<td>Santa Clara to McKee</td>
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<td>19</td>
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<td>85.0</td>
</tr>
<tr>
<td>I-280</td>
<td>10th to McLaughlin</td>
<td>EB</td>
<td>PM</td>
<td>45</td>
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<td>48.0</td>
</tr>
<tr>
<td>I-280</td>
<td>McLaughlin to US 101</td>
<td>EB</td>
<td>PM</td>
<td>64</td>
<td>8,450</td>
<td>33.0</td>
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<tr>
<td>I-680</td>
<td>US 101 to King</td>
<td>NB</td>
<td>PM</td>
<td>66</td>
<td>6,600</td>
<td>25.0</td>
</tr>
<tr>
<td>I-680</td>
<td>King to Capital</td>
<td>NB</td>
<td>PM</td>
<td>55</td>
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</tr>
<tr>
<td>I-680</td>
<td>Capital to Alum Rock</td>
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<td>I-680</td>
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<td>32</td>
<td>7,810</td>
<td>67.0</td>
</tr>
<tr>
<td>I-680</td>
<td>McKee to Alum Rock</td>
<td>SB</td>
<td>PM</td>
<td>39</td>
<td>8,270</td>
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<tr>
<td>I-680</td>
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<tr>
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<tr>
<td>I-280</td>
<td>McLaughlin to 10th</td>
<td>WB</td>
<td>AM</td>
<td>24</td>
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<td>57.0</td>
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<td>Story to Tully</td>
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<td>PM</td>
<td>23</td>
<td>5,310</td>
<td>77.0</td>
</tr>
</tbody>
</table>

**DIRIDON/ARENA**

<p>| SR 87 | Curtner to Almaden Expressway | NB | AM | 14 | 2,770 | 99.0 | F | 14 | 4,173 | 149.0 | F | 14 | 4,442 | 158.6 | F |
| SR 87 | Almaden Expressway to Alma | NB | AM | 21 | 3,400 | 81.0 | F | 21 | 5,585 | 133.0 | F | 21 | 5,677 | 135.2 | F |
| SR 87 | Alma to I-280 | NB | AM | 64 | 4,100 | 32.0 | D | 64 | 5,082 | 39.7 | D | 64 | 4,874 | 38.1 | D |
| SR 87 | I-280 to Julian | NB | AM | 66 | 3,300 | 25.0 | C | 66 | 3,491 | 26.4 | D | 66 | 3,403 | 25.8 | C |
| SR 87 | Julian to Coleman | NB | AM | 50 | 4,400 | 44.0 | D | 50 | 4,878 | 39.0 | D | 50 | 4,869 | 39.0 | D |
| I-280 | I-280 to Meridian | EB | PM | 27 | 6,890 | 69.0 | F | 27 | 9,207 | 85.3 | F | 27 | 9,206 | 85.2 | F |
| I-280 | Meridian to Bird | EB | PM | 26 | 7,380 | 71.0 | F | 26 | 14,001 | 97.9 | F | 26 | 14,208 | 99.4 | F |</p>
<table>
<thead>
<tr>
<th>FRWY.</th>
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<th>DIR.</th>
<th>PEAK HOUR</th>
<th>2000 EXISTING CONDITIONS</th>
<th>2030 WITHOUT PROJECT CONDITIONS</th>
<th>2030 BAR</th>
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</thead>
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<td></td>
<td>AVG SPEED</td>
<td>VOLUME</td>
<td>DENSITY</td>
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<td>PM</td>
<td>23</td>
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<td>76.0</td>
</tr>
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<td>I-280</td>
<td>SR B7 to 10th</td>
<td>EB</td>
<td>PM</td>
<td>29</td>
<td>7,540</td>
<td>65.0</td>
</tr>
<tr>
<td>I-280</td>
<td>10th to SR B7</td>
<td>WB</td>
<td>AM</td>
<td>19</td>
<td>6,540</td>
<td>86.7</td>
</tr>
<tr>
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<td>SR B7 to Bird</td>
<td>WB</td>
<td>AM</td>
<td>13</td>
<td>5,300</td>
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</tr>
<tr>
<td>I-280</td>
<td>Meridian to I-880</td>
<td>WB</td>
<td>AM</td>
<td>10</td>
<td>4,220</td>
<td>114.0</td>
</tr>
<tr>
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<td>SB</td>
<td>PM</td>
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<td>Julian to I-280</td>
<td>SB</td>
<td>PM</td>
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<td>2,160</td>
<td>120.0</td>
</tr>
<tr>
<td>SR 87</td>
<td>1-280 to Alma</td>
<td>SB</td>
<td>PM</td>
<td>16</td>
<td>2,980</td>
<td>93.0</td>
</tr>
<tr>
<td>SR 87</td>
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<td>SB</td>
<td>PM</td>
<td>36</td>
<td>4,030</td>
<td>56.0</td>
</tr>
</tbody>
</table>

**SANTA CLARA**

| US 101 | I-880 to Old Bayshore | NB | AM | 12 | 3,850 | 107.0 | F | 12 | 8,098 | 224.9 | F | 12 | 7,885 | 219.0 | F |
| US 101 | Old Bayshore to First | NB | AM | 17 | 4,640 | 91.0 | F | 17 | 8,541 | 167.5 | F | 17 | 8,557 | 167.8 | F |
| US 101 | First to Guadalupe  | NB | AM | 24 | 5,330 | 74.0 | F | 24 | 8,989 | 124.8 | F | 24 | 9,065 | 125.9 | F |
| US 101 | Guadalupe to De la Cruz | NB | AM | 28 | 5,630 | 67.0 | F | 28 | 11,272 | 100.6 | F | 28 | 11,348 | 101.3 | F |
| US 101 | De La Cruz to Montague | NB | AM | 42 | 6,300 | 50.0 | E | 42 | 9,287 | 63.2 | F | 42 | 9,608 | 65.4 | F |
| US 101 | Montague to Great America | NB | AM | 63 | 6,430 | 34.0 | D | 63 | 8,053 | 36.5 | D | 63 | 8,115 | 36.8 | D |
| I-880 | I-280 to Stevens Creek | NB | AM | 32 | 5,860 | 61.0 | F | 32 | 6,310 | 65.7 | F | 32 | 6,099 | 63.5 | F |
| I-880 | Stevens Creek to Bascom | NB | AM | 19 | 4,900 | 86.0 | F | 19 | 8,010 | 120.5 | F | 19 | 7,747 | 116.5 | F |
| I-880 | Bascom to The Alameda | NB | AM | 30 | 5,760 | 64.0 | F | 30 | 6,692 | 63.7 | F | 30 | 6,516 | 62.1 | F |
| I-880 | The Alameda to Coleman | NB | AM | 25 | 5,400 | 72.0 | F | 25 | 7,676 | 87.7 | F | 25 | 7,712 | 88.1 | F |
| I-880 | Coleman to SR B7    | NB | AM | 46 | 6,490 | 47.0 | E | 46 | 6,646 | 48.2 | E | 46 | 6,544 | 47.4 | E |
| I-880 | SR B7 to First      | NB | PM | 66 | 4,950 | 25.0 | C | 66 | 7,463 | 37.7 | D | 66 | 7,474 | 37.7 | D |
| I-880 | First to US 101     | NB | PM | 59 | 6,550 | 37.0 | D | 59 | 7,804 | 37.8 | D | 59 | 7,747 | 37.5 | D |
| I-880 | US 101 to First     | SB | PM | 10 | 3,420 | 114.0 | F | 10 | 7,820 | 260.7 | F | 10 | 7,762 | 258.7 | F |
| I-880 | First to SR B7      | SB | PM | 17 | 4,590 | 90.0 | F | 17 | 6,965 | 136.6 | F | 17 | 6,979 | 136.8 | F |
| I-880 | SR B7 to Coleman    | SB | PM | 40 | 6,240 | 52.0 | E | 40 | 6,965 | 58.0 | F | 40 | 6,979 | 58.2 | F |
| I-880 | Coleman to The Alameda | SB | PM | 39 | 6,200 | 53.0 | E | 39 | 8,962 | 65.7 | F | 39 | 9,104 | 66.7 | F |
Intersection Traffic Volumes and Level of Service

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

The results of the level of service analysis under the 2030 Without Project conditions show that 84 of the 124 study intersections are projected to operate at LOS E or LOS F during at least one peak hour (LOS F if the intersection is a CMP intersection). The resulting year 2030 Without Project with Improvements conditions served as a base from which to determine impacts attributable to the BART Extension Project. Without the improvements in place, level of service conditions with the Project would not accurately reflect impacts due to station traffic, but rather show problem areas under 2030 Without Project conditions compounded by the Project. Table 4.2-16 summarizes results of this analysis. Without mitigation, 84 intersections have an unacceptable level of service under 2030 Without Project conditions. This total reduces to 52 intersections with an unacceptable level of service under 2030 Without Project with Improvements.

In determining feasibility, mitigation measures are primarily limited by available right-of-way. A street that has made maximum use of the public and available private ROW is assumed to be built out, with no further widening feasible. There may be other considerations as well, such as the need for pedestrian and bicycle facilities, which would render infeasible further widening.
2030 PROJECT IMPACTS AND MITIGATION MEASURES

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

Freeways

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

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

A summary of the station area analysis results is presented by Table 4.2-17, which includes links projected to experience traffic impacts from the Project. Based on the summary of impacts, the 2030 BART Extension Project will divert some of the through trips along the freeways to the BART system. However, trips for station access (including self-drive, drop-off, etc.) will generate new trips of shorter duration. In comparing the BART Extension Project and Without Project conditions, the Project improves the traffic volumes/conditions in some segments. Even though the Project would impact two freeway segments near the Alum Rock Station area, the effects are marginal.

The segment of SR 87 from I-280 to Julian Street is projected to improve from a LOS D under the Without Project conditions to LOS C under the Project. In addition, the traffic density, the primary measure of level of service, is projected to be lower under the Project for 58 of the 96 study freeway segments. Thus, the BART Extension Project has a beneficial effect on freeway traffic overall, if the Diridon/Arena Station Parking Structure Option is selected. Freeway impacts associated with the Diridon/Arena Station No Parking Option are discussed below.

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

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

- **IMPACT.** The results of the analysis show that the Project would add new trips totaling more than 1 percent of the freeway capacity on four of the 21 directional freeway segments identified to operate at LOS F under 2030 Without Project conditions. The four freeway segments are:
  - I-880, Bascom Avenue to The Alameda (northbound AM peak hour)
  - I-880, The Alameda to Coleman Avenue (northbound AM peak hour)
  - I-880, Coleman Avenue to The Alameda (southbound PM peak hour)
  - I-800, The Alameda to Bascom Avenue (southbound PM peak hour)
MITIGATION.

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

Intersections

Table 4.2-18 summarizes the overall impact of the Project on study intersections in the cities of Milpitas, San Jose, and Santa Clara. There are no intersection impacts from the Project in the City of Fremont. A total of 29 of the 124 study intersections would be impacted in 2030. This total accounts for intersections assumed to have been mitigated, if possible, for other traffic growth projected by the model. Of the 29 intersections, there appears to be feasible mitigation measures for 10 intersections. The remaining 19 intersections impacted by station traffic do not have feasible mitigation measures due to physical constraints, cost and/or other reasons as identified. The text that follows discusses these impacts in more detail and describes the proposed mitigation measures. Because the mitigation analysis year is 2030, actual implementation of the mitigation measures is not required in the near term and monitoring and assessing the need for the improvements will be a long-term cooperative relationship between VTA and local jurisdictions. In addition, ongoing and future studies may result in modified improvements for the mitigation of BART Extension Project impacts. It should be noted that all intersections with a '*' indicate that this is a Congestion Management Program intersection that has specific applicable criteria as noted in Table 4-1.

Table 4.2-18:

<table>
<thead>
<tr>
<th>STATION</th>
<th># OF STUDY INTERSECTIONS</th>
<th># OF IMPACTED INTERSECTIONS</th>
<th># OF INTERSECTIONS MITIGATED</th>
<th># OF INTERSECTIONS W/NO FEASIBLE MITIGATION</th>
</tr>
</thead>
<tbody>
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<td>South Calaveras</td>
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<td>11</td>
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<tr>
<td>Montague/Capitol</td>
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<td></td>
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<td></td>
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<tr>
<td>Berryessa</td>
<td>12</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Alum Rock</td>
<td>19†</td>
<td>6</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Diridon/Rengen</td>
<td>34</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Santa Clara</td>
<td>23</td>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>124</td>
<td>29</td>
<td>10</td>
<td>19</td>
</tr>
</tbody>
</table>

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

Figure 4.2-1:
2030 South Calaveras Future Station Level of Service Conditions
Design Change 17. Montague/Capitol Station (With the South Calaveras Future Station). The results of the level of service analysis under 2030 BART Extension Project conditions with the Montague/Capitol Station and South Calaveras Future Station are presented in Figure 4.2-1. The results show that, measured against applicable level of service standards, 19 of the 36 signalized study intersections would operate at an unacceptable level under BART Extension Project conditions, as identified below. Note that, of the 19 signalized intersections projected to operate at unacceptable levels, only 11 would be adversely impacted by the Project during at least one of the peak hours according to the significant impact criteria. The 19 signalized study intersections operating at an unacceptable level include:

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

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

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

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

**IMPACT:**

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

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

**MITIGATION MEASURE:**

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

**Impacts:**

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

**Mitigation Measure:**

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

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

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

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

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

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

■ **MITIGATION MEASURE:**  
No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions. The identified 2030 Without Project possible improvements include the addition of second northbound, southbound, and eastbound left-turn lanes and the addition of an exclusive northbound right-turn lane. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. The necessary improvement to mitigate the Project impact at this intersection to an acceptable level consists of the widening of Park Victoria Drive from four to six lanes and the conversion of the eastbound right-turn lane on Landess Avenue to a free-right-turn lane. However, the widening of Park Victoria Drive to this extent is not feasible due to right-of-way constraints. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.
Old Oakland/Main Street and Montague Expressway* (No Cost-Effective Feasible Mitigation Measures) (Map location #17)

**IMPACT:**

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

**MITIGATION MEASURE:**

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

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

**IMPACT:**

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

**MITIGATION MEASURE:**

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

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

**IMPACT:**

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

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

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

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

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

**Milpitas Boulevard and Escuela Drive (Map location #27)**

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

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

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

**MITIGATION MEASURE:**

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

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

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

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

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

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

**Flickinger Avenue and Berryessa Road** (Map location #2)

**IMPACT:**

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

**MITIGATION MEASURE:**

The necessary improvement to mitigate the Project impact at this intersection to an acceptable level consists of the addition of a second eastbound left-turn lane on Berryessa Road. The implementation of this improvement will improve intersection level of service to an acceptable LOS D during the AM peak hour. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. With the implementation of the above traffic improvement, the Project would result in a less-than-significant impact.
Lundy Avenue and Berryessa Road
(No Cost-Effective Feasible Mitigation Measures) (Map location #3)

**IMPACT:**

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

**MITIGATION MEASURE:**

No cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions. The identified 2030 Without Project possible improvements include the addition of second eastbound and westbound left-turn lanes. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. The necessary improvement to mitigate the Project impact at this intersection to an
acceptable level consists of the widening of Lundy Road and Berryessa Road to three and four lanes in each direction, respectively. This improvement is not feasible due to right-of-way constraints along both of these roadways. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

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

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

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

**Design Change 33. Alum Rock Station.** The results of the level of service analysis under 2030 BART Extension Project conditions with the Alum Rock Station are shown in Figure 4.2-3. The results show that, measured against applicable level of service standards, 10 of the 19 signalized study intersections would operate at an unacceptable level under Project conditions, as identified below. Note that, of the ten signalized intersections projected to operate at unacceptable levels, only six would be adversely impacted by the Project during at least one of the peak hours according to the significant impact criteria. The ten signalized study intersections operating at an unacceptable level include:

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

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

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

> see Figure 4.2-3 >>
Figure 4.2-3:
2030 Alum Rock Station (with Calaveras) Intersection Level of Service Conditions
**US 101 and Julian Street** (Map location #3)

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

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

**US 101 and McKee Road** (Map location #4)

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

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

**US 101 and Santa Clara Street**

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

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

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

**McLaughlin Avenue and Story Road**

*(No Cost-Effective Feasible Mitigation Measures) (Map Location #14)*

**IMPACT:**

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

**MITIGATION MEASURE:**

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

**King Road and Mabury Road**

*(No Cost-Effective Feasible Mitigation Measures) (Map Location #18)*

**IMPACT:**

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

**MITIGATION MEASURE:**

No cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions. The identified 2030 Without Project possible improvement includes the addition of second westbound left-turn lane. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. The necessary improvements to mitigate the Project impact at this intersection to an acceptable level consist of the addition a third southbound left-turn lane, a third eastbound through lane, and a second eastbound right-turn lane. These improvements would require the widening of Mabury Road, which is not feasible due to right-of-way constraints. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.
Design Change 42. Diridon/Arena Station and Alignment (Parking Structure Option). The results of the level of service analysis under 2030 BART Extension Project conditions with the Diridon/Arena Station are shown in Figure 4.2-4. The results show that, measured against applicable level of service standards, 13 of the 34 signalized study intersections would operate at an unacceptable level under Project conditions. Note that, of the 13 signalized intersections projected to operate at unacceptable levels, only 3 would be adversely impacted by the Project during at least one of the peak hours according to significant impact criteria. The 13 signalized study intersections operating at an unacceptable level include:

![Figure 4.2-4: 2030 Diridon/Arena Station (with Calaveras) Intersection Level of Service Conditions](image-url)
The Alameda and Hedding Street* (Map location #1)
The Alameda and Taylor Street/Naglee Avenue* (Impact: AM and PM) (Map location #2)
Race Street and The Alameda* (Impact: PM only) (Map location #3)
Notre Dame Street and Santa Clara Street (Map location #8)
Market Street and Santa Clara Street (Map location #9)
Meridian Avenue and San Carlos Street (Map location #10)
Woz Way and San Carlos Street (Map location #15)
Almaden Boulevard and San Carlos Street* (Map location #16)
Market Street and San Carlos Street* (Map location #17)
Almaden Boulevard and Park Avenue (Map location #22)
Almaden Boulevard and San Fernando Street (Map location #25)
Autumn Street and Julian Street (Map location #32)
Cahill Street and Santa Clara Street (Impact: AM and PM) (Map location #34)

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

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

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

■ IMPACT:

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

■ MITIGATION MEASURE:

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

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

■ IMPACT:

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

**MITIGATION MEASURE:**

The identified 2030 Without Project possible improvement includes the addition of second westbound left-turn lane. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of these traffic improvements. With the Project traffic, a possible improvement includes the addition of an exclusive right-turn lane. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement.

Although intersection operations would improve to an acceptable LOS E during the AM peak hour with this improvement, the level of service would remain at an unacceptable LOS F during the PM peak hour for both the Without Project and Project. The unacceptable level of service condition at this intersection is due to the significantly high non-Project related eastbound right-turn movement volume. The necessary improvement to improve intersection operations to acceptable levels consists of the addition of a fourth eastbound lane on The Alameda. However, this improvement would require the widening of The Alameda and Race Street, which is not feasible due to right-of-way constraints and not required to mitigate Project related traffic impacts. With the implementation of the above traffic improvement, the Project would result in a less-than-significant impact.

**Design Change 42. Diridon/Arena Station and Alignment (No Parking Option).** The No Parking Option would not provide any parking at this location. The No Parking Option traffic model projections indicate that with the elimination of the parking structure at the Diridon/Arena Station, the majority of the PNR traffic projected to use the Diridon/Arena Station would use the Santa Clara Station as alternate access. LOS conditions were evaluated at the study intersections in the vicinity of the Diridon/Arena Station under 2030 6-Station conditions without parking at the Diridon/Arena Station. The LOS results were then compared to the 6-Station condition with parking provided at the Diridon/Arena Station. The results of the LOS analyses, indicate that the LOS would be the similar at all of the study intersections, with the exception of the three intersections discussed below. The study freeway segments for the Diridon/Arena Station were also analyzed based on the No Parking Option. The results of the analysis indicate that the No Parking Option would not add traffic representing one percent or more of the freeway’s capacity to any of the study freeway segments. Therefore, none of the freeway segments analyzed in the vicinity of the Diridon/Arena Station would be impacted by the No Parking Option (Hexagon, October 2006).
The Alameda and Taylor Street/Naglee Avenue* (No Cost-Effective Feasible Mitigation Measures) (Map location #2)

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

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

Autumn Street and Julian Street
(Map location #32)

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

■ MITIGATION MEASURE:
Mitigation will include adding a third eastbound through lane to reduce impacts. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. With the implementation of the above traffic improvement, the Project would result in a less-than-significant impact.

Cahill Street and Santa Clara Street
(Map location #34)

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

■ MITIGATION MEASURE:
The necessary mitigation measures to mitigate the Project impact at this intersection include the addition of a second northbound left-turn lane and the addition of an exclusive left-turn and right-turn lane on the eastbound approach. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. With the implementation of the above traffic improvement, the Project would result in a less-than-significant impact.
Design Change 52. Santa Clara Station (With Parking Structure Option at Diridon/Arena Station). The results of the level of service analysis under 2030 BART Extension Project conditions with the Santa Clara Station are presented in Figure 4.2-5. The results show that, measured against applicable level of service standards, 14 of the 23 signalized study intersections would operate at an unacceptable level under Project conditions, as identified below. Note that, of the 14 signalized intersections projected to operate at unacceptable levels, only 6 would be adversely impacted by the Project during at least one of the peak hours according to the significant impact criteria. The 14 signalized study intersections operating at an unacceptable level include:

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

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

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

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

**IMPACT:**

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

**MITIGATION MEASURE:**

No other cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions. The identified 2030 Without Project possible improvements include the addition of second left-turn lanes on all approaches. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of this traffic improvement. The necessary improvement to improve intersection operations to acceptable levels would require grade separation of the intersection. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.
Figure 4.2-5: 2030 Santa Clara Station (With Calaveras) Level of Service Conditions
**Lafayette Street and Benton Street**  
*Map location #10*

**IMPACT:**

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

**MITIGATION MEASURE:**

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

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

**IMPACT:**

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

**MITIGATION MEASURE:**

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

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

**IMPACT:**

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

**MITIGATION MEASURE:**

The identified 2030 Without Project possible improvements include the addition of a third eastbound left-turn lane and a second eastbound right-turn lane. While these improvements would upgrade operations to acceptable levels, they may not be feasible due to right-of-way constraints on Central Expressway. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of these traffic improvements. No cost-effective feasible improvements can be made at this intersection beyond those identified under the 2030 Without Project conditions to mitigate Project impacts. The necessary improvement to mitigate...
the Project impact at this intersection consists of the addition of third northbound left-turn lane, a third southbound through lane, and a free southbound right-turn lane, on De La Cruz Boulevard. However, these improvements would require the widening of both De La Cruz Boulevard and Central Expressway, which is not feasible due to right-of-way constraints. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

Monroe Street and Benton Street  
(Map location #18)

**IMPACT:**

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

**MITIGATION MEASURE:**

Possible improvements include the addition of exclusive northbound and southbound right-turn lanes on Monroe Street. This improvement may be challenging due to right-of-way constraints along Monroe Street, but it is included as possible improvement. Although intersection operation levels will improve with the implementation of these improvements to conditions better than Without Project, the intersection level of service would remain at an unacceptable LOS F during the PM peak hour. Because the Project would contribute to traffic congestion at this intersection, the Project will contribute a “fair share” amount toward the implementation of these traffic improvements. Right-of-way constraints along De La Cruz Boulevard prohibit the widening of De La Cruz Boulevard to the necessary four lanes in the southbound direction to mitigate Project impacts. Should a feasible improvement be determined, a “fair share” contribution will be evaluated at that time. The Project would cause a significant unavoidable impact at this intersection.

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

The No Parking Option traffic model projections indicate that, with the elimination of the parking structure at the Diridon/Arena Station, the majority of the PNR traffic projected to use the Diridon/Arena Station would use the Santa Clara Station as alternate...
access. Since the only PNR traffic access to the Santa Clara Station is provided directly by Coleman Avenue, the majority of the displaced PNR traffic from the Diridon/Arena Station to the Santa Clara Station would use Coleman Avenue. LOS conditions were evaluated at the study intersections in the vicinity of the Santa Clara Station under 2030 6-Station conditions without parking at the Diridon/Arena Station. The LOS results were compared to the 6-Station condition with parking provided at the Santa Clara Station. The results of the LOS analyses indicate that the LOS would be similar at all of the study intersections, with the exception of the Coleman Avenue and Brokaw Road intersection (Hexagon, October 2006).

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

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

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

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

Freeways

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

The four impacted freeway segments are:
- I-880, Bascom Avenue to The Alameda (northbound AM peak hour)
- I-880, The Alameda to Coleman Avenue (northbound AM peak hour)
- I-880, Coleman Avenue to The Alameda (southbound PM peak hour)
- I-880, The Alameda to Bascom Avenue (southbound PM peak hour)

Intersections

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

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

Design Change 23. Berryessa Station.

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

Design Change 33. Alum Rock Station

- 24th Street and Santa Clara Street (Impact PM only)
- US 101 and Santa Clara Street* (Impact PM only)
- McLaughlin Avenue and Story Road (Impact AM only)
- King Road and Mabury Road (Impact PM only)
Design Change 42. Diridon/Arena Station. (Both Parking Structure and No Parking Options)
- The Alameda and Taylor Street/Naglee Avenue* (Impact AM and PM)

Design Change 52. Santa Clara Station. (Both Parking Structure and No Parking Options at Diridon/Arena Station).
- San Tomas Expressway and El Camino Real* (Impact PM only) – FEIR also identified as significant unavoidable impact at this intersection
- De La Cruz Boulevard and Central Expressway* (Impact PM only)
- De La Cruz Boulevard and Martin Avenue (Impact PM only)

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

**SOUTH CALAVERAS FUTURE STATION**
- Calaveras Boulevard and Abel Street
- Milpitas Boulevard and Jacklin Street
- Milpitas Boulevard and Montague Expressway

**DIRIDON/ARENA STATION**
- San Carlos Street and Almaden Boulevard
- San Carlos Street and Market Street
- Park Avenue and Race Street
- Auzerais Avenue and Delmas Avenue

**MONTAGUE/CAPITOL STATION**
- Great Mall Parkway and Abel Street

**SANTA CLARA STATION**
- Lafayette Street and Central Expressway
- Homestead Road and Munroe Street
- Monroe Street San Tomas Expressway

**BERRYESSA STATION**
- Oakland Road and Brokaw Road

**ALUM ROCK STATION**
- McKee Road and King Road