# Section 3.1 Transportation

## Introduction

This section discusses the environmental setting and effects of the alternatives analyzed in this Supplemental DEIS with regard to transportation. Specifically, this section discusses existing transportation conditions within the Capitol Expressway Corridor, describes applicable regulations pertaining to transportation, and addresses potential adverse effects and mitigation measures.

This section is based on the August 2010 transportation study prepared by AECOM (AECOM 2010). A copy of the transportation study is available for review at VTA offices upon request.

## Affected Environment

### EXISTING CONDITIONS

This section presents the existing traffic conditions in the study area, including existing roadway facilities, traffic volumes, intersection geometries and operating conditions at key locations during the weekday AM and PM peak periods.

The study corridor can be regionally accessed by freeways, expressways and arterials, as well as VTA transit buses and light rail. The study area is defined, consistent with the traffic study, by the alignment of the proposed LRT extension to the Eastridge Station.

#### *Transit Services*

Transit services within the study area are operated by VTA and include light rail, fixed-route bus, commuter rail, intercity rail, and paratransit service.

The following information is based on routes and schedules prior to January 11, 2010 when VTA implemented major service changes. These services include light rail transit on three lines (two main lines and a spur line) and bus service on approximately 80 routes.

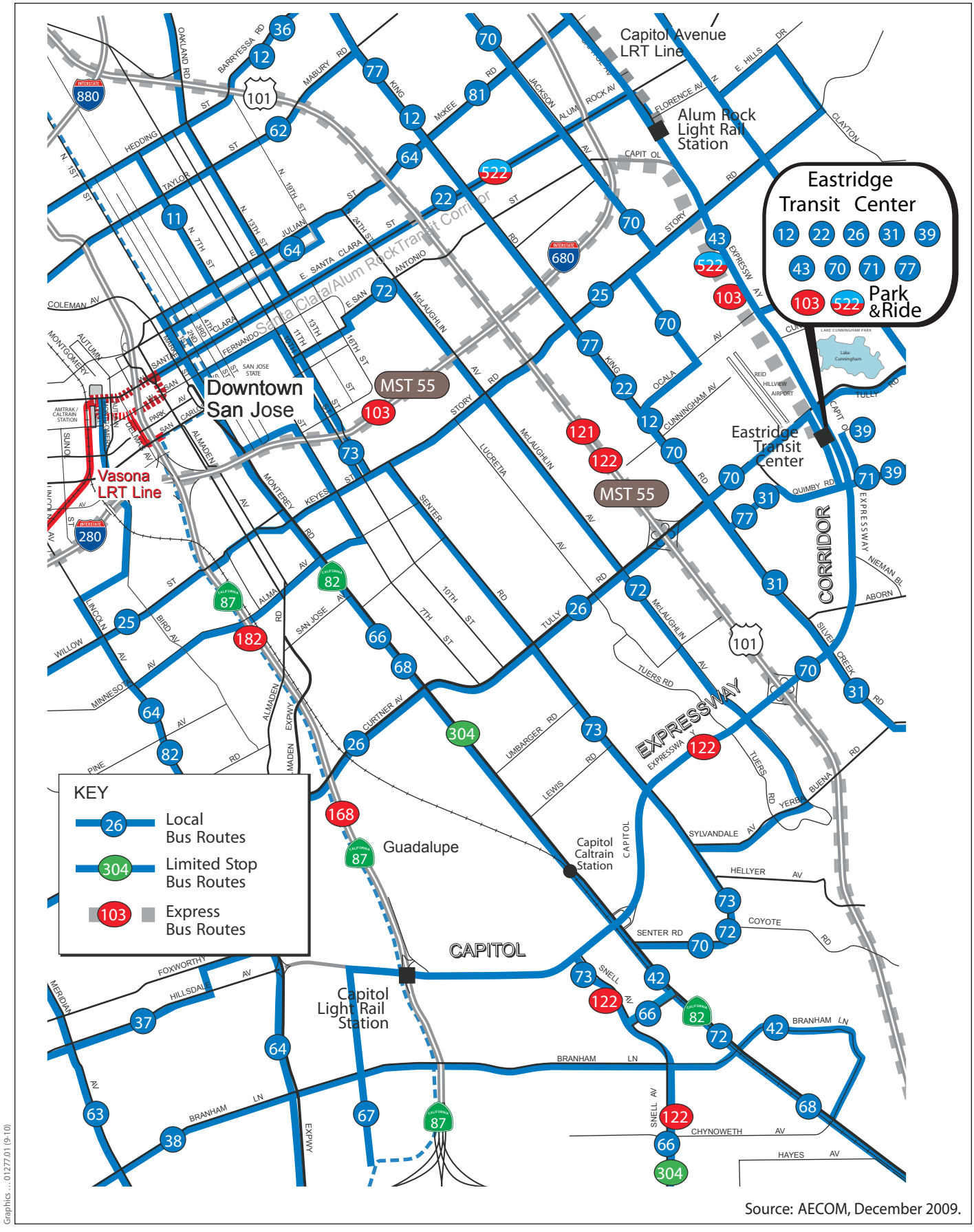
Bus Service

Existing transit service in the East Valley is dominated by long-haul bus service. VTA operates several bus routes on major cross-town and local streets, connecting the area to the rest of the region. Connections within the system are focused on the Eastridge Transit Center, which serves 11 bus routes. The transit network in the project vicinity is presented in Figure 3.1-1.

Local bus routes run weekdays from early in the morning (generally between 5:00 am to 6:00 am) until late in the evening (generally between 10:00 pm to 11:00 pm) and weekends from early in the morning (generally between 6:00 am to 7:00 am) until mid-evening (generally between 7:00 pm to 10:00 pm). An exception is Line 22 which operates 24 hours a day, seven days a week. Limited stop and express bus services operate only during the peak periods from Monday to Friday. Table 3.1-1 lists the bus lines that serve the project study area along with their hours of operation and general headways.

The study area is served by several of the most heavily-used bus routes in the VTA system. Lines 22 (King Road to Santa Clara Street), 25 (Story Road), and 70 (Capitol Expressway and Jackson Avenue) each carry more than 5,000 passengers on an average weekday over the full length of their routes (not just the portions in the project vicinity). Table 3.1-2 presents the average weekday ridership for the bus lines that serve the project study area

Major intersections and transit centers are the principal locations where passengers may make connections between routes. It is at these locations that passenger activity (i.e., boarding and alighting) is focused. Along the project corridor, the Eastridge Transit Center has the highest levels of passenger activity in the study area, with 4,482 daily boardings and alightings. The next highest level of passenger activity occurs at Story Road with 290 daily boardings and alightings. Table 3.1-3 summarizes the daily passenger activity for the bus stops at major intersections and transit centers along the project corridor. The total passenger activity for these locations is presented graphically in Figure 3.1-2.




Source: AECOM, December 2009.

**Figure 3.1-1**
**Existing Transit Network**

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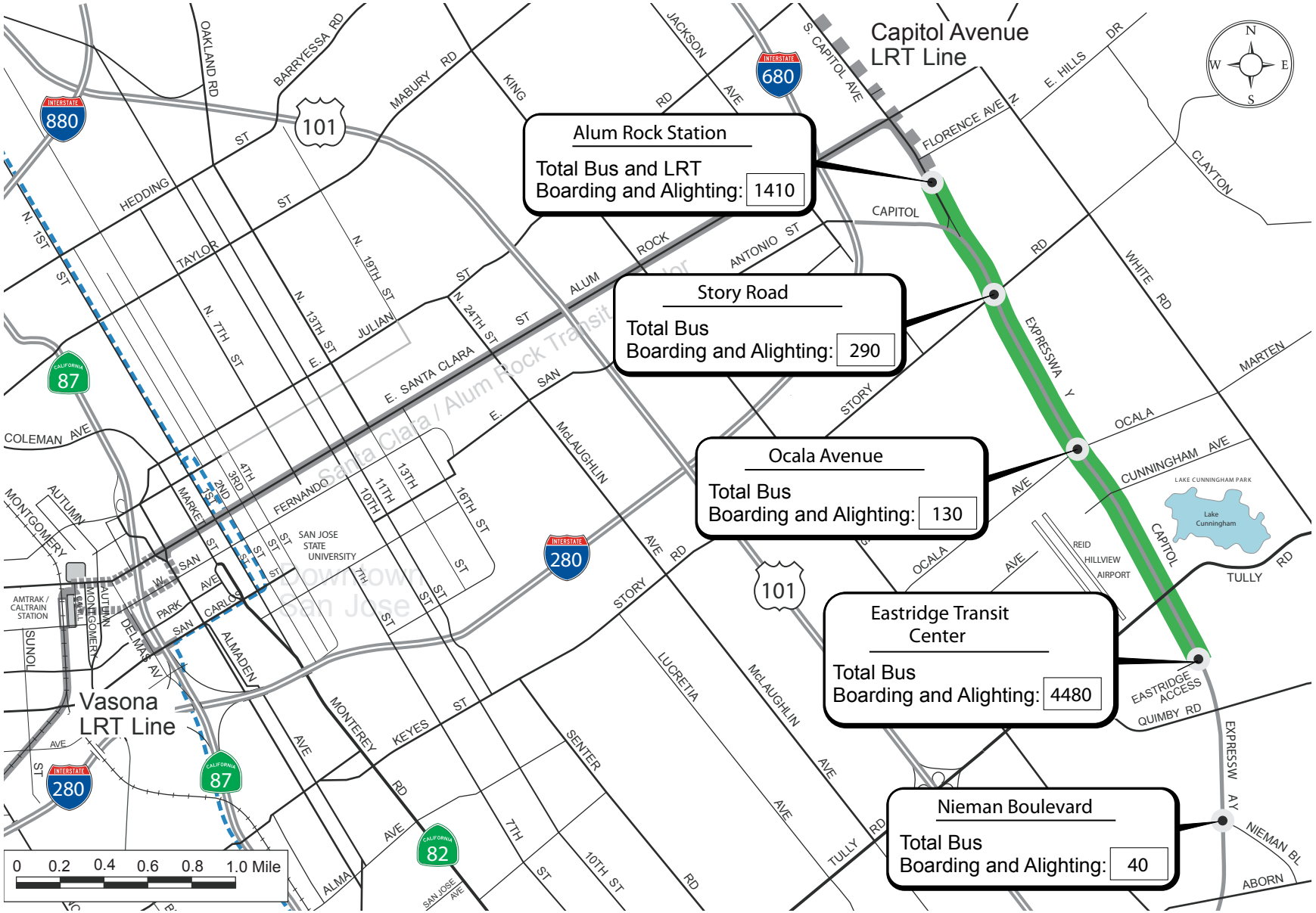


As of December 2009.

Source: AECOM, December 2009.

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**Figure 3.1-2**
**Daily Passenger Activity**

## Table 3.1-1. Bus Service Hours/Headways

| Line | Description | Weekday Services | | | | Weekend Hours of Operation |
|---|---|---|---|---|---|---|
| | | | Headways | | | |
| | | Hours of Operation | Peak (5:00 a.m.–9:00 a.m., 3:00 p.m.–6:00 p.m.) | Midday (9:00 a.m.–3:00 p.m.) | Night (after 7:00 p.m.) | |
| **Local Routes** | | | | | | |
| 12 | Eastridge to San Jose Civic Center via San Jose Flea Market | | Weekends and Holidays Only | | | 9:30 a.m.–7:00 p.m. |
| 22 | Eastridge to Palo Alto Transit Center | 24 Hours | 12 | 12 | 20–60 | 24 Hours |
| 23 | De Anza College to Alum Rock Transit Center via Stevens Creek | 5:23 a.m.-1:02 a.m. | 12 | 12 | 15–60 | 5:40 a.m.-1:04 a.m. |
| 25 | De Anza College to Alum Rock Transit Center via Valley Medical Center | 5:09 a.m.-12:35 a.m. | 10–30 | 10 | 15–60 | 5:39 a.m-12:00 a.m. |
| 26 | Eastridge to Lockheed Martin | 5:00 a.m.–11:45 a.m. | 20–30 | 15–30 | 30–60 | 6:30 a.m.–10:30 p.m. |
| 31 | Eastridge to Evergreen College | 5:45 a.m.–10:30 p.m. | 15 | 30 | 30–60 | 7:30 a.m.–7:00 p.m. |
| 39 | Eastridge to The Villages | 5:45 a.m.–7:30 p.m. | 30 | 60 | NA | 7:45 a.m.–7:00 p.m. |
| 43 | Eastridge to Alum Rock Transit Center | | Sundays Only | | | 9:15 a.m.–6:30 p.m. (Sundays Only) |
| 45 | Alum Rock Transit Center to Penitencia Creek Transit Center | 6:30 a.m.–7:30 p.m. | 60 | 60 | NA | 9:30 a.m.–6:00 p.m. |
| 70 | Capitol LRT Station to Great Mall/Main Transit Center | 5:00 a.m.–11:30 p.m. | 15 | 15 | 30–60 | 6:15 a.m.–11:30 p.m. |
| 71 | Eastridge to Great Mall/Main Transit Center | 5:30 a.m.–10:15 p.m. | 15 | 30 | 30–60 | 7:00 a.m.–9:30 a.m. |
| 77 | Eastridge to Great Mall/Main Transit Center and Calaveras | 5:30 a.m.–10:00 p.m. | 15 | 15 | 30–60 | 6:45 a.m.–9:00 p.m. |
| **Express Routes and BRT** | | | | | | |
| 103 | Eastridge to Palo Alto | 5:15 a.m.–8:15 a.m., 2:45 p.m.–6:15 p.m. | 40–60 | NA | NA | NA |
| 522 | Eastridge to Palo Alto | 5:00 a.m.–9:00 p.m. | 15 | 15 | 30 | 6:15 a.m.–8:30 p.m. (Saturdays) |

Source: VTA website, July 2009.

## Table 3.1-2. Average Weekday Bus Ridership by Route

| Route | Daily Ridership |
|---|---|
| 12 | 795 |
| 22 | 16,365 |
| 23 | 8,350 |
| 25 | 7,316 |
| 26 | 4,362 |
| 31 | 1,030 |
| 39 | 367 |
| 43 | 85 |
| 45 | 384 |
| 70 | 5,566 |
| 71 | 2,263 |
| 77 | 2,342 |
| 103 | 113 |
| 522 | 6,105 |

Source: VTA Reporting and Systems Department 2009.

## Table 3.1-3. Daily Passenger Activity at Selected Intersections and Transit Centers

| Location | # of Lines | Bus Stop | | | | Total |
|---|---|---|---|---|---|---|
| | | Northbound | Southbound | Eastbound | Westbound | |
| Story Road | 4 | 72 | 61 | 76 | 81 | 290 |
| Ocala Avenue | 1 | 75 | 54 | 0 | 0 | 129 |
| *Eastridge Transit Center* | *11* | *3,872* | *610* | *0* | *0* | *4,482* |

Source: VTA Reporting and Systems Department 2009.
Notes: Transit Centers are in *italics*. Passenger activity includes both boarding and alighting.

Light Rail Service

Transit passengers in the East Valley have access to the VTA light rail network via the Alum Rock–Santa Teresa Line. Direct service is available at the Capitol Light Rail Station, located near the Capitol Expressway/State Route (SR) 87 (Guadalupe Parkway) interchange, and the Alum Rock Station near the Capitol Expressway/South Capitol Avenue intersection. Table 3.1-4 presents the existing LRT service details. All three LRT lines operate seven days a week with frequency ranging from 15 minutes to one hour depending on time of the day. The LRT lines are presented graphically in Figure 3.1-3.

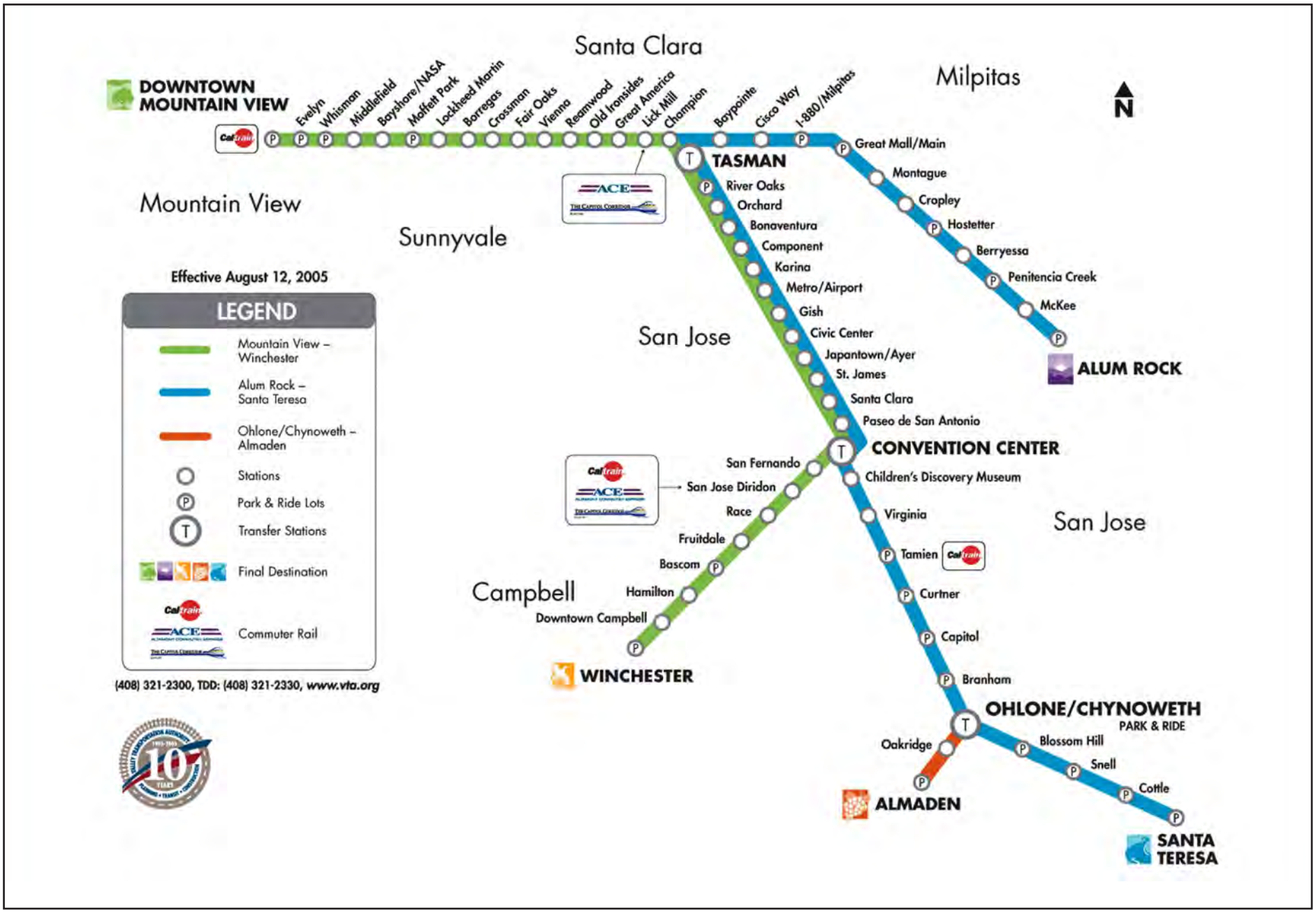


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**Figure 3.1-3**
**Light Rail Station Street Locations**

## Table 3.1-4. Light Rail Services Hours and Headways

| | Weekday Services | | | | |
|---|---|---|---|---|---|
| | | Headways | | | |
| Light Rail Line | Hours of Operation | Peak (5:00 a.m.–9:00 a.m., 3:00 p.m.–6:00 p.m.) | Midday (9:00 a.m.–3:00 p.m.) | Night (after 7:00 p.m.) | Weekend Hours of Operation |
| Alum Rock to Santa Teresa | 4:30 a.m.–2:00 a.m. | 15 | 15 | 15–60 | 4:30 a.m.–2:00 a.m. |
| Mountain View to Winchester Avenue | 5:00 a.m.–12:30 a.m. | 15 | 30 | 15–30 | 5:15 a.m.–12:30 a.m. |
| Ohlone/Chynoweth to Almaden | 5:45 a.m.–10:30 p.m. | 15 | 15 | 15 | 7:00 a.m.–10:30 p.m. |

Source: VTA Bus and Rail Map, July 2009.

### *Vehicular Traffic*

The existing roadway network, Congestion Management Plan (CMP), and existing travel volumes and level of service (LOS) are discussed below. As shown in Figure 3.1-4, eight signalized intersections along the Capitol Expressway corridor are included in the study area.

#### Existing Roadway Network

The existing roadway network consists of the following freeways, state highways, expressways, and arterial streets:

- I-680
- Alum Rock Avenue
- Capitol Expressway
- South Capitol Avenue
- Story Road
- Ocala Avenue
- Cunningham Avenue
- Tully Road
- Quimby Road
- Nieman Boulevard

Table 3.1-5 lists the signalized intersections (by number and cross street), general-plan designation of each cross street, location within the Capitol Expressway Corridor, and annual average daily traffic (AADT) volumes. The spacing of the intersections along the expressway generally varies from 1,400 feet to more than 4,000 feet (AECOM 2010).

#### Existing Travel Volumes and Level of Service

Daily traffic within the study area varies by transportation facility. Traffic volumes were obtained from counts conducted by AECOM in June 2009 for the study intersections at South Capitol Avenue, Story Road, Ocala Avenue, Cunningham, Avenue, Tully Road, Eastridge Access, and Quimby Road. Additionally, traffic volumes for the study intersection at Nieman Road were obtained from counts conducted by Korve Engineering in February 2005. Since traffic volumes have not changed appreciably since 2005, the volumes at the Nieman Boulevard intersection were not recounted by AECOM during preparation of the 2010 transportation study.

The analysis of existing traffic conditions focuses on the AM and PM peak hour operations at 15 intersections along Capitol Expressway because peak hour traffic


Source: AECOM, December 2009.

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**Figure 3.1-4**
**Study Intersections**

operations are a more accurate gauge of traffic congestion than daily traffic. The intersections were also analyzed based on the CMP *Traffic Level of Service Analysis Guidelines* (Santa Clara Valley Transportation Authority 2003).

The analysis estimates the operations of intersections and assigns a letter grade LOS to the intersections based on the average stopped delay per vehicle. For signalized intersections in an urban environment, an intersection that has an operational LOS of D or better is generally considered to perform satisfactorily. LOS E suggests that the intersection is unstable, teetering between successful operations and breakdown, with critical volumes approaching saturation. LOS F is considered to have failing operations and excessive delay due to overcapacity.

In general, traffic volumes are heavy along Capitol Expressway and its cross streets, resulting in diminished operational performance. Table 3.1-5 lists the existing LOS at each study intersection for the AM and PM peak hours. It also identifies the estimated delays and calculated volume-to-capacity (V/C) ratio at each study intersection. The intersections vary from acceptable operations to intersections with LOS E and F operations. The existing LOS E and F intersections are further described in Table 3.1-6 (AECOM 2010).

V/C ratios are also used to determine adverse impacts. The V/C is a simple numeric value of the traffic volume through the intersection divided by the intersection capacity.

## Table 3.1-5. Signalized Intersections and Annual Average Daily Traffic

| Intersections with Capitol Expressway | | Cross Street Designation[1] | Distance to Next Intersection[2] (feet) | ADT (west/east) (vehicles/day) |
|---|---|---|---|---|
| 1 | Capitol Ave | Arterial | 1,800 | 3,000/17,000 |
| 2 | Story | Arterial | 4,200 | 34,000/29,000 |
| 3 | Ocala | Arterial | 1,200 | 15,000/20,000 |
| 4 | Cunningham | Local | 2,700 | 2,000/3,000 |
| 5 | Tully | Arterial | 1,200 | 30,000/32,000 |
| 6 | Eastridge | Local | 1,600 | 8,000/NA |
| 7 | Quimby | Arterial | 2,800 | 30,000/31,000 |
| 8 | Nieman | Major Collector | 1,700 | NA/12,000 |

Source: City of San Jose, 2005.

Notes: for this study, the Capitol Expressway corridor is considered to run north/south from South Capitol Avenue to Nieman Boulevard.

[1] Designations derived from the City of San Jose 2020 General Plan.

[2] Distances are rounded to the nearest 100 feet.

**Table 3.1-6. Existing Intersection Levels of Service, AM and PM Peak Hours**

| | Intersections with Capitol Expressway | CMP | AM Peak Hours LOS | AM Peak Hours Average Delay (s) | AM Peak Hours V/C | PM Peak Hours LOS | PM Peak Hours Average Delay (s) | PM Peak Hours V/C |
|---|---|---|---|---|---|---|---|---|
| 1 | South Capitol Avenue | Yes | D+ | 36.6 | 0.809 | D | 42.0 | 0.772 |
| 2 | Story Road | Yes | E- | 75.4 | 1.039 | D- | 54.3 | 0.843 |
| 3 | Ocala Avenue | No | D | 43.1 | 0.717 | D | 50.1 | 0.675 |
| 4 | Cunningham Avenue | No | B | 12.7 | 0.609 | A | 9.0 | 0.515 |
| 5 | Tully Road | Yes | D | 47.7 | 0.745 | D | 49.7 | 0.618 |
| 6 | Eastridge Access | No | A | 5.4 | 0.410 | B | 12.6 | 0.434 |
| 7 | Quimby Road | Yes | E | 72.3 | 0.998 | F | 81.6 | 0.993 |
| 8 | Nieman Boulevard | No | D | 42.5 | 0.757 | C+ | 20.7 | 0.515 |

Source: AECOM 2010.
Notes: shaded cells indicate LOS E or F.

Future Conditions

Under future conditions, two project alternatives, the No-Build Alternative and the Light Rail Alternative, are analyzed for the corridor in 2018 and 2035. In addition, the Light Rail Alternative has two design options. One design option does not include the Ocala Station. The second design option does not replace the sidewalk along the west side of Capitol Expressway between Ocala Avenue and Foxdale Drive with a new multi-use path and landscaping to minimize the acquisition of properties from residences. Traffic impacts associated with these options are further discussed under "Proposed Options." The ridership data presented in the following section includes Ocala Station for illustrative purposes only.

### *Projected Transit Ridership*

The VTA travel demand model was used to determine ridership along the project corridor. Ridership for the horizon year 2035 was projected by mode. Access mode to the LRT stations is also provided.

Table 3.1-7 summarizes the project corridor ridership by station and mode for the four stations. The modes of travel are LRT, BRT and other bus transit. The ridership figures in Table 3.1-8 are daily boardings in the future with the Light Rail Alternative. Total corridor daily boardings for the No-Build Alternative in 2035 is 11,124. The Light Rail Alternative with and without Ocala Station have similar corridor boardings; 11,271 for the Ocala Station option and 11,346 for the No Ocala Station option.

Table 3.1-9 summarizes the mode of access to the LRT stations. At the Eastridge Station, most of the light rail boardings are transfers from buses using the transit center, followed by Park-and-Ride, walking to the station and finally being dropped off by someone. At the Ocala Station, all passengers walk to the LRT station. At the Story Station, the access is split fairly evenly between walk and transfer from a bus. At the Alum Rock Station, most passengers walk, followed by transfer and then Park-and-Ride and drop off.

### *Projected Park-and-Ride Demand*

Park-and-Ride facilities would be available for use by LRT passengers. Two locations, the Alum Rock Station and the Eastridge Transit Center, along the proposed LRT extension already have Park-and-Ride lots as part of the existing transit facilities. For the facility at Alum Rock, no modification to the current configuration is anticipated. The facility at the Eastridge Station would be expanded to satisfy future demand with the light rail station construction. Table 3.1-10 provides information about the areas around the two Park-and-Ride lots.

The expected Park-and-Ride demand in the future for the project alternatives were projected using the VTA Santa Clara County Travel Demand Model. The modeling process used to estimate Park-and-Ride demand tends to overestimate the number of people arriving at a light rail station and parking their car for the day. Historically, VTA has found more individuals arrive by walking, being dropped off or transferring from a bus than estimated by the model, resulting in an overestimation of the Park-and-Ride demand.

**Table 3.1-7. Intersections with Existing Level of Service E and F**

| | Period | | |
|---|---|---|---|
| Cross Street | AM | PM | Comments |
| Story Road | Unstable | Ok | Heavy southbound left turn and northbound through volumes in a.m. |
| Quimby Road | Unstable | Failing | Heavy left turn movements, heavy northbound through movements during a.m. and heavy southbound through movements during p.m. |

Source: AECOM 2010.

## Table 3.1-8. Estimated Station Boarding by Mode in 2035

| | | Daily Boardings | | |
|---|---|---|---|---|
| Station | Mode | No-Build | With LRT (Base) | With LRT No Ocala |
| Eastridge | LRT | NA | 1,541 | 1,563 |
| | BRT | 2,086 | 1,580 | 1,577 |
| | Other Bus | 2,289 | 2,433 | 2,439 |
| | Total | 4,375 | 5,554 | 5,579 |
| Ocala | LRT | NA | 250 | NA |
| | BRT | 537 | 416 | 530 |
| | Other Bus | NA | NA | NA |
| | Total | 537 | 666 | 530 |
| Story | LRT | NA | 1,053 | 1,179 |
| | BRT | 2,033 | 1,672 | 1,734 |
| | Other Bus | 23 | 22 | 22 |
| | Total | 2,056 | 2,747 | 2,935 |
| Alum Rock | LRT | 2,043 | 923 | 921 |
| | BRT | 1,764 | 1,137 | 1,137 |
| | Other Bus | 349 | 244 | 244 |
| | Total | 4,156 | 2,304 | 2,302 |
| **LRT Total** | | **2,043** | **3,767** | **3,663** |
| **BRT Total** | | **6,420** | **4,805** | **4,978** |
| **Other Bus Total** | | **2,661** | **2,699** | **2,705** |
| **Grand Total** | | **11,124** | **11,271** | **11,346** |

Source: VTA 2010.

## Table 3.1-9. Estimated Future Passenger Mode of Access to Light Rail Stations

| | Walk (%) | Park-and-Ride (%) | Drop Off (%) | Transfer from Bus (%) |
|---|---|---|---|---|
| Eastridge | 19 | 26 | 5 | 50 |
| Ocala | 100 | 0 | 0 | 0 |
| Story | 55 | 0 | 0 | 45 |
| Alum Rock | 42 | 18 | 4 | 36 |

Source: AECOM 2009.

The expected demand at the Eastridge Transit Center Park-and-Ride in 2035 without the project is 164 spaces while the demand with the Light Rail Alternative is approximately 480 spaces. There are currently 135 spaces at Eastridge Transit Center. The project is proposing to add 135 spaces for a total of 270 spaces. Given the

difference between the expected demand of 481 and proposed supply of 270 parking spaces, VTA will monitor Park-and-Ride demand at Eastridge and will implement one of the following options when demand exceeds supply on a consistent basis:

1. Coordinate with Mall to share parking.
2. Acquire more property from Mall.
3. Build a parking structure on VTA property if it is cost-effective.
4. Implement additional transit options.

At the Alum Rock Park-and-Ride the existing number of spaces (110) is expected to be less than the future estimated demand of 129 spaces with the Light Rail Alternative. VTA will monitor the Park-and-Ride demand at Alum Rock Station. When demand exceeds supply on a consistent basis, VTA will encourage passengers to use the Eastridge Transit Center. VTA will also try to negotiate an arrangement with the adjacent residential complex to share parking as the peak usage for these two land uses occur at different times of the day. VTA is not proposing to construct a parking structure because of potential adverse impacts to adjacent properties, including displacement of residents and visual effects from a multi-story parking structure being placed next to single- and multifamily residences. If it is not possible to reduce demand or increase supply at Alum Rock Station, parking spillover into the surrounding neighborhoods could occur. If so, VTA will work with the city to eliminate this affect, possibly with the implementation of a neighborhood parking permit program. See Figure 3.1-5 Alum Rock Transit Center, which shows the existing Park-and-Ride lot and its relationship to adjacent properties.

**Table 3.1-10. Estimated Demand and Supply for Park-and-Ride Spaces in 2035**

| Station | Existing (2009) | No-Build Alternative | Light Rail Alternative (Ocala) | Light Rail Alternative (No Ocala) | Notes |
|---|---|---|---|---|---|
| **Alum Rock** | | | | | |
| Demand | 77 | 110 | 129 | 128 | Existing Park-and-Ride facility would remain. No expansion has been planned. |
| Supply | 110 | 110 | 110 | 110 | |
| **Eastridge** | | | | | |
| Demand | 16 | 164 | 476 | 481 | Existing Park-and-Ride of 135 spaces would be expanded to 270 to partially address the new demand. |
| Supply | 135 | 135 | 270 | 270 | |

Source: VTA 2009.

### *On-Street and Off-Street Parking Loss*

The Light Rail Alternative is anticipated to result in the loss of on-street and off-street parking at various locations along the corridor.

An estimated nine spaces would be removed along Capitol Avenue between Westboro Drive and south of Highwood Drive to accommodate roadway and intersection reconfiguration. These spaces are adjacent to single family homes with garages and driveways. Additional on-street parking will continue to be available on Westboro Drive, Highwood Drive and Dover Way to accommodate any overflow.

The Light Rail Alternative will narrow the southern section of South Capitol Avenue north of Story Road to accommodate the Story Road Station. This will require the removal of 7 on-street parking spaces from the east side of South Capitol Avenue and 8 on-street parking spaces from the west side of South Capitol Avenue. These spaces are adjacent to single family homes with garages and driveways. Additional on-street parking will continue to be available on the west side of South Capitol Avenue north of this area to accommodate any overflow.

Up to 16 on-street parking spaces would be removed along South Capitol Avenue between Kollmar Drive and Sussex Drive in order to accommodate the Story Road Station. These spaces are currently adjacent to an apartment building located at 2710 Kollmar Drive. In addition to assigned parking spaces onsite, most of the on-street parking south of Sussex Drive will continue to be available to accommodate any overflow.

An estimated 135 parking spaces will be needed from Eastridge Mall in order to meet demand generated by the Light Rail Alternative. Based on a review of aerial photographs from December 13 and 20, 2008, these spaces are not usually used probably due to their location far from the mall entrances.

### *Projected Travel Time for All Alternatives*

The roadway and light rail travel times and speeds have been estimated for Capitol Expressway with and without the Light Rail Alternative in 2018 and 2035. The travel times and speeds are summarized in Table 3.1-11 and Table 3.1-12.

Travel time for each segment is determined by adding the calculated average intersection delay to the segment's estimated running time at a free flow speed of 45 mph (posted speed limit) providing an approximation of future conditions along the expressway.

Under existing conditions, total travel time for both the northbound and southbound directions is less than 4 minutes 30 seconds in the mixed flow lanes during the AM peak hour. During the PM peak hour, the northbound travel time is almost 6 minutes and the southbound travel time is just over 4 minutes. Travel times in the high-


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**Figure 3.1-5**
**Alum Rock Transit Center**

occupancy vehicle (HOV) lanes in both directions are lower when compared to the mixed lanes during both peak hours.

Under the No-Build Conditions, two BRT routes are assumed to be in operation. The roadway geometry would be very similar to the existing configuration except at the Story Road intersection where the exclusive right-turn lane (along Capitol Expressway) also functions as a queue jump lane for the BRT buses. Under the Light Rail Alternative Conditions, the two HOV lanes will be removed leaving six mixed-flow lanes.

For the mixed flow lanes, average travel times are expected to increase over existing conditions under both the No-Build and Light Rail scenarios. For the No-Build Alternative, travel times are expected to increase by 16 percent in 2018 and by 91 percent in 2035 over existing conditions as a result of projected increases in traffic volumes. Traffic volumes are anticipated to increase by 300 vehicles in both directions in 2018 and by 1,000 vehicles in the northbound direction and by 500 vehicles in the southbound direction in 2035. For the Light Rail Alternative, travel times for the mixed flow lanes are expected to increase by 24 percent in 2018 and 128 percent in 2035 over existing conditions as a result of the increase in traffic volumes and the reduction in capacity. It should be noted that travel time for the non-prevailing direction; southbound in the AM and northbound in the PM, does not differ very much between the No-Build and With Light Rail Alternatives. The non-prevailing direction has lower traffic volumes which can more readily be accommodated by the three mixed flow lanes. The proposed LRT also operates under transit signal priority which tends to benefit the through traffic along the expressway.

For the HOV lanes, average travel times are expected to increase over existing conditions under both the No-Build and Light Rail Alternatives. For the No-Build Alternative, travel times are expected to increase by 10 percent in 2018 and by 15 percent in 2035 over existing conditions as a result of projected increases in traffic volumes. For the Light Rail Alternative, there will no longer be any HOV lanes. As a result, 2018 and 2035 travel times for HOV users will be similar to travel times for the mixed flow lanes. Travel times for HOV users are expected to increase by 32 percent in 2018 and 142 percent in 2035.

Under the No-Build Alternative, the BRT would operate along the HOV lane. There are two BRT stops along the corridor; one at the far side of Story Road intersection and one at the far side of Ocala Road intersection. The travel time for BRT, assuming a dwell time of 20 seconds per stop, is estimated by adding the average delay at each intersection along the HOV lane and the dwell time to the segment running time. Since there is no BRT operating under existing conditions, no comparison of travel time is included for the No-Build Alternative.

Under the Light Rail Alternative, the BRT would operate along the mixed flow lanes as the HOV lanes would be removed. The estimated travel time for BRT, in this case, is obtained by adding the dwell time (20 seconds per stop) to the average mixed flow travel times presented in Table 3-11. Compared to the No-Build Alternative, BRT

travel times with the Light Rail Alternative are expected to increase by 24 percent in 2018 and 113 percent in 2035.

The Light Rail Alternative would operate in semi-exclusive right-of-way and is only affected by automobile traffic at the intersections of Ocala Avenue and Cunningham Avenue. Not only would the Light Rail Alternative have signal priority at these intersections, there would not be traffic queues like the adjacent automobile traffic. As such, the travel times for the Light Rail Alternative are shorter than the mixed-flow lanes and are more consistent. Compared to the No-Build Alternative, travel times for the Light Rail Alternative are 6 percent less than the mixed-flow lanes in 2018 and 86 percent less than the mixed-flow lanes in 2035.

## Table 3.1-11. Travel Time and Speed Data for Roadway, Bus, and Light Rail in 2018

| | | Northbound | | | | Southbound | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | AM | | PM | | AM | | PM | |
| Travel Times and Speeds | Distance (miles) | Travel Time (minutes) | Speed (mph) | Travel Time (minutes) | Speed (mph) | Travel Time (minutes) | Speed (mph) | Travel Time (minutes) | Speed (mph) |
| **Existing Mixed Flow Lanes** | | | | | | | | | |
| Between South Capitol Avenue & Ocala Avenue | 1.17 | 2.07 | 33.91 | 3.02 | 23.25 | 1.83 | 38.36 | 2.49 | 28.19 |
| Between Ocala Avenue & Eastridge | 1.14 | 1.94 | 35.26 | 2.70 | 25.33 | 2.44 | 28.03 | 1.64 | 41.71 |
| **Total** | **2.31** | **4.01** | **34.56** | **5.72** | **24.23** | **4.27** | **32.46** | **4.13** | **33.56** |
| **Existing HOV Lane** | | | | | | | | | |
| Between South Capitol Avenue & Ocala Avenue | 1.17 | 1.70 | 41.29 | 2.95 | 23.80 | 2.06 | 34.08 | 2.56 | 27.42 |
| Between Ocala Avenue & Eastridge | 1.14 | 2.03 | 33.69 | 2.60 | 26.31 | 1.64 | 41.71 | 1.52 | 45.00 |
| **Total** | **2.31** | **3.73** | **37.16** | **5.55** | **24.97** | **3.70** | **37.46** | **4.08** | **33.97** |
| **2018 No-Build Mixed Flow Lanes** | | | | | | | | | |
| Between South Capitol Avenue & Ocala Avenue | 1.17 | 3.22 | 21.80 | 3.25 | 21.60 | 2.52 | 27.86 | 2.46 | 28.54 |
| Between Ocala Avenue & Eastridge | 1.14 | 2.65 | 25.81 | 2.87 | 23.83 | 2.02 | 33.86 | 2.02 | 33.86 |
| **Total** | **2.31** | **5.87** | **23.61** | **6.12** | **22.65** | **4.54** | **30.53** | **4.48** | **30.94** |
| **2018 No-Build HOV Lanes** | | | | | | | | | |
| Between South Capitol Avenue & Ocala Avenue | 1.17 | 2.07 | 33.91 | 2.59 | 27.10 | 2.44 | 28.77 | 2.17 | 32.35 |
| Between Ocala Avenue & Eastridge | 1.14 | 2.25 | 30.40 | 3.21 | 21.31 | 2.00 | 34.20 | 1.96 | 34.90 |
| **Total** | **2.31** | **4.32** | **32.08** | **5.80** | **23.90** | **4.44** | **31.22** | **4.13** | **33.56** |
| **2018 BRT (Along HOV Lane)** | | | | | | | | | |
| Between South Capitol Avenue & Ocala Avenue | 1.17[1] | 2.70 | 26.00 | 3.03 | 23.17 | 3.03 | 23.17 | 2.78 | 25.25 |
| Between Ocala Avenue & Eastridge | 1.14 | 2.20 | 31.09 | 2.89 | 23.67 | 1.97 | 34.72 | 1.94 | 35.26 |
| **Total** | **2.31** | **4.90** | **28.29** | **5.92** | **23.41** | **5.00** | **27.72** | **4.73** | **29.30** |
| **2018 With LRT (Base) Mixed Flow Lanes** | | | | | | | | | |
| Between South Capitol Avenue & Ocala Avenue | 1.17 | 3.05 | 23.02 | 3.24 | 21.67 | 2.83 | 24.81 | 3.01 | 23.32 |
| Between Ocala Avenue & Eastridge | 1.14 | 3.10 | 22.06 | 3.34 | 20.48 | 1.97 | 34.72 | 1.99 | 34.37 |
| **Total** | **2.31** | **6.15** | **22.54** | **6.58** | **21.06** | **4.80** | **28.88** | **5.00** | **27.66** |

| | | Northbound | | | | Southbound | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | AM | | PM | | AM | | PM | |
| Travel Times and Speeds | Distance (miles) | Travel Time (minutes) | Speed (mph) | Travel Time (minutes) | Speed (mph) | Travel Time (minutes) | Speed (mph) | Travel Time (minutes) | Speed (mph) |
| **2018 BRT (With LRT) Mixed Flow Lanes** | | | | | | | | | |
| Between South Capitol Avenue & Ocala Avenue | 1.17[1] | 3.20 | 21.94 | 3.65 | 19.23 | 3.50 | 20.06 | 3.69 | 19.02 |
| Between Ocala Avenue & Eastridge | 1.14 | 3.45 | 19.83 | 3.05 | 22.43 | 1.97 | 34.72 | 1.99 | 34.37 |
| **Total** | **2.31** | **6.65** | **20.84** | **6.70** | **20.69** | **5.47** | **25.34** | **5.68** | **24.40** |
| **LRT** | | | | | | | | | |
| Between Alum Rock TC & Ocala Station | 1.30 | 3.02 | 25.82 | 3.02 | 25.82 | 3.02 | 25.82 | 3.02 | 25.82 |
| Between Ocala Station & Eastridge TC | 1.03 | 1.98 | 31.21 | 1.98 | 31.21 | 1.98 | 31.21 | 1.98 | 31.21 |
| **Total** | **2.33** | **5.00** | **27.96** | **5.00** | **27.96** | **5.00** | **27.96** | **5.00** | **27.96** |

Source: AECOM 2010.

Notes: H = HOV/carpool lanes; LRT = light rail transit line.

[1] Dwell time of 2 BRT stops included in this segment.

## Table 3.1-12. Travel Time and Speed Data for Roadway, Bus, and Light Rail in 2035

| | | Northbound | | | | Southbound | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | AM | | PM | | AM | | PM | |
| Travel Times and Speeds | Distance (miles) | Travel Time (minutes) | Speed (mph) | Travel Time (minutes) | Speed (mph) | Travel Time (minutes) | Speed (mph) | Travel Time (minutes) | Speed (mph) |
| **Existing Mixed Flow Lanes** | | | | | | | | | |
| Between South Capitol Avenue & Ocala Avenue | 1.17 | 2.07 | 33.91 | 3.02 | 23.25 | 1.83 | 38.36 | 2.49 | 28.19 |
| Between Ocala Avenue & Eastridge | 1.14 | 1.94 | 35.26 | 2.70 | 25.33 | 2.44 | 28.03 | 1.64 | 41.71 |
| **Total** | **2.31** | **4.01** | **34.56** | **5.72** | **24.23** | **4.27** | **32.46** | **4.13** | **33.56** |
| **Existing HOV Lane** | | | | | | | | | |
| Between South Capitol Avenue & Ocala Avenue | 1.17 | 1.70 | 41.29 | 2.95 | 23.80 | 2.06 | 34.08 | 2.56 | 27.42 |
| Between Ocala Avenue & Eastridge | 1.14 | 2.03 | 33.69 | 2.60 | 26.31 | 1.64 | 41.71 | 1.52 | 45.00 |
| **Total** | **2.31** | **3.73** | **37.16** | **5.55** | **24.97** | **3.70** | **37.46** | **4.08** | **33.97** |
| **2035 No-Build Mixed Flow Lanes** | | | | | | | | | |
| Between South Capitol Avenue & Ocala Avenue | 1.17 | 6.14 | 11.43 | 6.83 | 10.27 | 2.53 | 27.70 | 4.48 | 15.66 |
| Between Ocala Avenue & Eastridge | 1.14 | 4.56 | 15.00 | 6.02 | 11.36 | 2.01 | 33.99 | 2.13 | 32.10 |
| **Total** | **2.31** | **10.69** | **12.97** | **12.86** | **10.78** | **4.55** | **30.48** | **6.61** | **20.96** |
| **2035 No-Build HOV Lanes** | | | | | | | | | |
| Between South Capitol Avenue & Ocala Avenue | 1.17 | 2.10 | 33.43 | 3.18 | 22.08 | 2.42 | 29.01 | 2.18 | 32.20 |
| Between Ocala Avenue & Eastridge | 1.14 | 2.35 | 29.11 | 2.90 | 23.59 | 2.47 | 27.69 | 2.01 | 34.03 |
| **Total** | **2.31** | **4.45** | **31.15** | **6.08** | **22.80** | **4.89** | **28.34** | **4.19** | **33.00** |
| **2035 BRT (Along HOV Lane)** | | | | | | | | | |
| Between South Capitol Avenue & Ocala Avenue | 1.17 | 2.72 | 25.81 | 3.19 | 22.01 | 3.01 | 23.32 | 2.80 | 25.07 |
| Between Ocala Avenue & Eastridge | 1.14 | 2.29 | 29.87 | 2.93 | 23.34 | 2.11 | 32.42 | 1.99 | 34.37 |
| **Total** | **2.31** | **5.02** | **27.61** | **6.12** | **22.65** | **5.12** | **27.07** | **4.79** | **28.94** |
| **2035 With LRT (Base) Mixed Flow Lanes** | | | | | | | | | |
| Between South Capitol Avenue & Ocala Avenue | 1.17 | 8.03 | 8.74 | 7.10 | 9.89 | 2.88 | 24.38 | 7.29 | 9.63 |
| Between Ocala Avenue & Eastridge | 1.14 | 5.85 | 11.69 | 5.78 | 11.83 | 2.40 | 28.50 | 2.08 | 32.88 |
| **Total** | **2.31** | **13.88** | **9.98** | **12.88** | **10.76** | **5.22** | **26.55** | **9.37** | **14.79** |

| Travel Times and Speeds | Distance (miles) | Northbound AM Travel Time (minutes) | Northbound AM Speed (mph) | Northbound PM Travel Time (minutes) | Northbound PM Speed (mph) | Southbound AM Travel Time (minutes) | Southbound AM Speed (mph) | Southbound PM Travel Time (minutes) | Southbound PM Speed (mph) |
|---|---|---|---|---|---|---|---|---|---|
| **2035 BRT (With LRT) Mixed Flow Lanes** | | | | | | | | | |
| Between South Capitol Avenue & Ocala Avenue | 1.17 | 8.70 | 8.07 | 7.77 | 9.03 | 3.55 | 19.77 | 7.96 | 8.82 |
| Between Ocala Avenue & Eastridge | 1.14 | 5.85 | 11.69 | 5.78 | 11.83 | 2.12 | 32.26 | 2.08 | 32.88 |
| **Total** | **2.31** | **14.55** | **9.53** | **13.55** | **10.23** | **5.67** | **24.44** | **10.04** | **13.80** |
| **LRT** | | | | | | | | | |
| Between Alum Rock TC & Ocala Station | 1.30 | 3.02 | 25.83 | 3.02 | 25.83 | 3.02 | 25.83 | 3.02 | 25.83 |
| Between Ocala Station & Eastridge TC | 1.03 | 1.98 | 31.21 | 1.98 | 31.21 | 1.98 | 31.21 | 1.98 | 31.21 |
| **Total** | **2.33** | **5.00** | **27.96** | **5.00** | **27.96** | **5.00** | **27.96** | **5.00** | **27.96** |

Source: AECOM 2010.
Notes: H = HOV/carpool lanes; LRT = light rail transit line.

### *Projected Traffic for All Alternatives*

The traffic analysis provides an evaluation of traffic and transportation issues related to the proposed alternatives, and outlines the effects of the alternatives on the local and regional transportation network. Traffic volumes used for analysis were derived from the VTA Santa Clara County Travel Demand Model. The study intersection operations for the Light Rail Alternative were assessed for the AM and PM peak hours for the 2018 and 2035 horizons. These were then compared to the No-Build Alternative.

The study intersections within the Capitol Expressway Corridor were analyzed based on the CMP *Traffic Level of Service Analysis Guidelines* (Santa Clara Valley Transportation Authority 2003).

Table 3-1.13 shows the average stopped delay criteria associated with each level of service interval in accordance with the CMP methodology.

Tables 3.1-14 and 3.1-15 show the 2018 AM and PM peak hour traffic operational conditions, respectively, for the Light Rail Alternative. Intersections for which there would be an adverse effect are shaded. Similarly, Tables 3.1-16 and 3.1-17 summarize the 2035 AM and PM peak hour traffic operational conditions, respectively, for the Light Rail Alternative. Intersections on which there would be an adverse effect are shaded.

**Table 3.1-13. CMP Level of Service Thresholds**

| LOS | Average Control Delay (seconds/vehicle) |
|---|---|
| A | Delay < 10.0 |
| B+ | 10.0 < Delay < 12.0 |
| B | 12.0 < Delay < 18.0 |
| B- | 18.0 < Delay < 20.0 |
| C+ | 20.0 < Delay < 23.0 |
| C | 23.0 < Delay < 32.0 |
| C- | 32.0 < Delay < 35.0 |
| D+ | 35.0 < Delay < 39.0 |
| D | 39.0 < Delay < 51.0 |
| D- | 51.0 < Delay < 55.0 |
| E+ | 55.0 < Delay < 60.0 |
| E | 60.0 < Delay < 75.0 |
| E- | 75.0 < Delay < 80.0 |
| F | Delay > 80.0 |

## Table 3.1-14. Intersection Level of Service, Delay, and Volume-to-Capacity Ratio under the Light Rail Alternative, 2018 AM

| | | | 2018 AM No-Build | | | | 2018 AM With LRT (Base) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Intersection | Cross Street | CMP? | LOS | Avg Delay (sec) | Crit V/C | Crit Delay (sec) | LOS | Avg Delay (sec) | Crit V/C | Crit Delay (sec) | Δ in Crit Delay (sec) |
| 1 | South Capitol Avenue | Yes | D | 47.5 | 0.899 | 52.4 | F | 91.1 | 1.120 | 113.4 | 61.0 |
| 2 | Story Road | Yes | F | 100.7 | 1.163 | 134.8 | F | 95.5 | 1.146 | 128.6 | -6.2 |
| 3 | Ocala Avenue | No | E+ | 58.1 | 0.810 | 64.9 | E | 62.5 | 0.771 | 72.0 | 7.1 |
| 4 | Cunningham Avenue | No | B+ | 11.6 | 0.684 | 8.2 | B+ | 11.6 | 0.643 | 8.4 | 0.2 |
| 5 | Tully Road | Yes | D- | 51.4 | 0.857 | 54.1 | D | 46 | 0.609 | 46.7 | -7.4 |
| 6 | Eastridge Access | No | A | 5.3 | 0.472 | 1.0 | A | 5.8 | 0.396 | 1.1 | 0.1 |
| 7 | Quimby Road | Yes | F | 88.1 | 1.092 | 119.5 | E | 72.8 | 0.990 | 87.8 | -31.7 |
| 8 | Nieman Boulevard | No | D | 40.2 | 0.881 | 49.6 | C- | 33.4 | 0.760 | 41.2 | -8.4 |

Source: AECOM 2010.
Note: Shaded cells indicate adverse effects.

## Table 3.1-15. Intersection Level of Service, Delay, and Volume-to-Capacity Ratio under the Light Rail Alternative, 2018 PM

| | | | 2018 PM No-Build | | | | 2018 PM With LRT (Base) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Intersection | Cross Street | CMP? | LOS | Avg Delay (sec) | Crit V/C | Crit Delay (sec) | LOS | Avg Delay (sec) | Crit V/C | Crit Delay (sec) | Δ in Crit Delay (sec) |
| 1 | South Capitol Avenue | Yes | D- | 52.9 | 0.907 | 56.7 | D | 46.3 | 0.759 | 44.8 | -11.9 |
| 2 | Story Road | Yes | E | 68.4 | 0.985 | 104.2 | E | 60.7 | 0.904 | 79.9 | -24.3 |
| 3 | Ocala Avenue | No | E+ | 58.6 | 0.779 | 58.0 | E | 74.4 | 0.835 | 87.3 | 29.3 |
| 4 | Cunningham Avenue | No | A | 9.0 | 0.589 | 5.0 | A | 8.7 | 0.601 | 4.4 | -0.6 |
| 5 | Tully Road | Yes | D- | 54.5 | 0.774 | 72.0 | D- | 53.7 | 0.715 | 68.7 | -3.3 |
| 6 | Eastridge Access | No | B | 13.5 | 0.509 | 17.8 | B | 13.9 | 0.478 | 18.5 | 0.7 |
| 7 | Quimby Road | Yes | F | 112.0 | 1.133 | 145.5 | F | 111.3 | 1.117 | 139.1 | -6.4 |
| 8 | Nieman Boulevard | No | C | 28.2 | 0.780 | 43.4 | C | 27.7 | 0.761 | 42.7 | -0.7 |

Source: AECOM 2010.
Note: Shaded cells indicate adverse effects.

## Table 3.1-16. Intersection Level of Service, Delay, and Volume-to-Capacity Ratio under the Light Rail Alternative, 2035 AM

| | | | 2035 AM No-Build | | | | 2035 AM With LRT (Base) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Intersection | Cross Street | CMP? | LOS | Avg Delay (sec) | Crit V/C | Crit Delay (sec) | LOS | Avg Delay (sec) | Crit V/C | Crit Delay (sec) | Δ in Crit Delay (sec) |
| 1 | South Capitol Avenue | Yes | F | 106.1 | 1.176 | 136.8 | F | 172.5 | 1.394 | 231.9 | 95.1 |
| 2 | Story Road | Yes | F | 161.8 | 1.400 | 237.7 | F | 156.2 | 1.396 | 236.0 | -1.7 |
| 3 | Ocala Avenue | No | F | 102.9 | 0.986 | 143.1 | F | 118.1 | 0.963 | 168.1 | 25.0 |
| 4 | Cunningham Avenue | No | B | 12.5 | 0.826 | 9.7 | B | 12.1 | 0.802 | 9.6 | -0.1 |
| 5 | Tully Road | Yes | E | 72.6 | 1.065 | 90.8 | E+ | 56.3 | 0.916 | 60.6 | -30.2 |
| 6 | Eastridge Access | No | A | 5.4 | 0.590 | 1.2 | A | 5.8 | 0.514 | 1.2 | 0.0 |
| 7 | Quimby Road | Yes | F | 129.1 | 1.271 | 193.2 | F | 106.1 | 1.169 | 151.0 | -42.2 |
| 8 | Nieman Boulevard | No | E | 61.9 | 1.043 | 82.0 | D | 41.1 | 0.922 | 52.1 | -29.9 |

Source: AECOM 2010.
Note: Shaded cells indicate adverse effects.

## Table 3.1-17. Intersection Level of Service, Delay, and Volume-to-Capacity Ratio under the Light Rail Alternative, 2035 PM

| | | | 2035 PM No-Build | | | | 2035 PM With LRT (Base) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Intersection | Cross Street | CMP? | LOS | Avg Delay (sec) | Crit V/C | Crit Delay (sec) | LOS | Avg Delay (sec) | Crit V/C | Crit Delay (sec) | Δ in Crit Delay (sec) |
| 1 | South Capitol Avenue | Yes | F | 116.6 | 1.162 | 146.0 | F | 86.9 | 1.081 | 113.7 | -32.3 |
| 2 | Story Road | Yes | F | 137.8 | 1.252 | 221.7 | F | 121.9 | 1.180 | 172.7 | -49.0 |
| 3 | Ocala Avenue | No | F | 105.4 | 0.997 | 134.8 | F | 126.6 | 1.081 | 166.3 | 31.5 |
| 4 | Cunningham Avenue | No | A | 10.0 | 0.729 | 6.4 | B+ | 10.4 | 0.757 | 6.3 | -0.1 |
| 5 | Tully Road | Yes | F | 87.1 | 1.070 | 133.6 | E- | 78.2 | 1.011 | 112.6 | -21.0 |
| 6 | Eastridge Access | No | B | 15.7 | 0.650 | 23.6 | B | 15.8 | 0.620 | 24.1 | 0.5 |
| 7 | Quimby Road | Yes | F | 199.4 | 1.426 | 267.8 | F | 195.6 | 1.409 | 260.8 | -7.0 |
| 8 | Nieman Boulevard | No | E- | 78.6 | 1.126 | 113.5 | E | 73.8 | 1.107 | 106.3 | -7.2 |

Source: AECOM 2010.
Note: Shaded cells indicate adverse effects.

# Environmental Consequences

## APPROACH AND METHODS

The effects of the proposed alternatives related to transportation were assessed based on a review of the findings of the transportation study prepared by AECOM in August 2010 (AECOM 2010).

## IMPACT THRESHOLDS

Since the circulation of the Draft EIS/EIR (April 2004), VTA adopted new significance thresholds to be consistent with changes to the Guidelines for Implementation of the California Environmental Quality Act (CEQA) effective January 1, 2010. The new significance thresholds did not include effects on parking as a result of a court case, San Franciscans Upholding the Downtown Plan v. City & County of SF, 2002. In this case, the court ruled that parking deficits are an inconvenience to drivers but not a significant physical impact on the environment. In the case, the court also ruled that there could be indirect effects from providing "insufficient parking supply" that should be evaluated for environmental impacts.

NEPA also recognizes that there could be indirect effects from providing "insufficient parking supply". As a result, the SDEIS still includes a discussion of parking supply under future conditions with the Light Rail Alternative. These indirect effects are evaluated where applicable.

## EFFECTS AND MITIGATION MEASURES

### *No-Build Alternative (2018 and 2035)*

Compared to existing conditions the No-Build Alternative would result in increased delay to most intersections under 2018 and 2035 AM/PM peak hour traffic operational conditions. Planned projects included in the No-Build Alternative would be evaluated in separate environmental analyses to identify impacts and determine mitigation measures. Under this alternative, two BRT routes are assumed to be in operation.

### *Light Rail Alternative (2018 and 2035)*

This analysis considers the effects of the Light Rail Alternative under 2018 and 2035 AM/PM peak hour traffic operational conditions. Construction impacts related to transportation (including long-term street closures or interference with traffic flow) are discussed in Chapter 3.18 *Construction*. Under this alternative, the BRT would operate along the mixed-flow lanes as the HOV lanes would be removed.

Traffic Impacts at Intersections

The Light Rail Alternative will have the following effects at intersections when compared to the No-Build Alternative:

**Impact: Capitol Expressway/South Capitol Avenue**

In 2018, the Light Rail Alternative would result in a change from LOS D to LOS F at Capitol Expressway/South Capitol Avenue during the AM peak hour, resulting in an adverse effect.

In 2035, the Capitol Expressway/South Capitol Avenue intersection would operate at LOS F during the AM and PM peak hours under the No-Build Alternative. The Light Rail Alternative would result in an increase in V/C by more than 0.01 and an increase in critical delay of more than four seconds in the AM peak hour, resulting in an adverse effect.

**Adverse effects. No feasible mitigation.**

**Impact: Capitol Expressway/Ocala Avenue**

In 2018, the Capitol Expressway/Ocala Avenue intersection would operate at LOS E in both the AM and PM peak hours under the No-Build Alternative. The Light Rail Alternative would result in an increase in V/C by more than 0.01 and critical delay of more than four seconds in the PM peak hour, resulting in an adverse effect.

A potential mitigation measure would be to replace the existing HOV lanes between Capitol Avenue and Tully Road that will be removed under the Light Rail Alternative. Because the existing HOV lanes would be removed to provide space for the light rail trackway, right-of-way would need to be acquired from adjacent properties. In addition, retaining the HOV lanes would likely result in severe noise and vibration impacts at many properties. Since implementing this mitigation measure would have several adverse effects on adjacent properties, it is not considered feasible.

**Adverse effects. No feasible mitigation.**

Changes to Roadway Access and Diversion

The Light Rail Alternative will not impede any access currently offered from Capitol Expressway. All intersection movements possible before construction will be possible after the Light Rail Alternative is implemented. This alternative will have the following effects on other roadway access and diversion:

**Impact: Capitol Expressway/Story Road intersection**

In the southeast quadrant of the Capitol Expressway/Story Road intersection, Kollmar Drive will continue to connect to Capitol Avenue. However access southbound (between Kollmar Drive and Sussex Drive) will be restricted to one-way travel (refer to Figure 3.1-6). Properties fronting on Kollmar Drive will continue to use it for access to and from Story Road. Northbound traffic on Capitol Avenue that previously turned onto Kollmar Drive will have to use Sussex Drive to McGinness Avenue to reach Story Road. Because there is alternative access via neighborhood streets, there is no adverse effect and no mitigation is required.

**No adverse effects. No mitigation required.**

Insufficient Parking

**Impact: Indirect Impacts from Insufficient Parking**

The Light Rail Alternative will remove a total of 40 residential parking spaces and 135 of commercial parking spaces. Since the residential spaces are not concentrated in any one location and since there are available spaces in the vicinity of the affected areas, no indirect impacts are anticipated to transportation or air quality. These impacts would occur if there was a significant increase in driving as motorists look for parking spaces. At Eastridge Mall, where the loss of commercial parking spaces is concentrated, the affected spaces are not well-utilized due to their location far from the mall entrances. As a result, the loss of these commercial spaces is not anticipated to result in indirect impacts to transportation or air quality.

**No adverse effects. No mitigation required.**

Changes to Pedestrian and Bicycle Facilities

The Light Rail Alternative will reconstruct or enhance any pedestrian or bicycle facilities that are affected by construction. As a result, the Light Rail Alternative will have no adverse effect on pedestrian and bicycle facilities.

Changes to HOV Network and Travel Time

The Light Rail Alternative will have the following adverse effect on HOV users:

**Impact: Increase HOV Travel Times**

The Light Rail Alternative will reduce the connectivity of the HOV network that currently exists along Capitol Expressway by removing

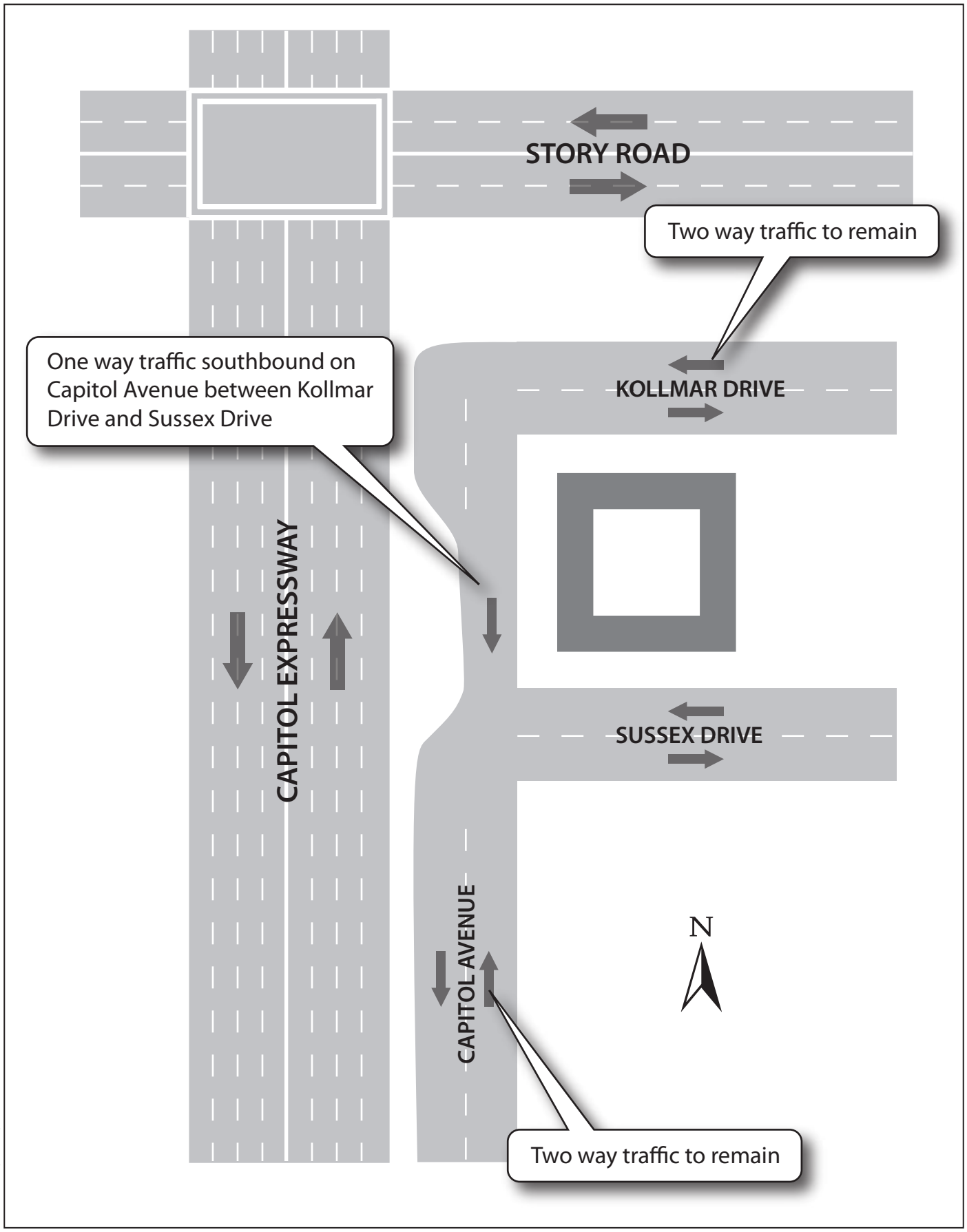


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**Figure 3.1-6**
**Capital Expressway/Story Road Intersection**

HOV lanes between Capitol Avenue and Tully Road. Average travel times for HOV users are expected to increase by 32 percent in 2018 and 142 percent over existing conditions in 2035. This equates to a 1 minute 40 second increase in travel time in 2018 and a 6 minute 10 second increase in travel time in 2035.

A potential mitigation measure would be to replace the existing HOV lanes between Capitol Avenue and Tully Road that will be removed under the Light Rail Alternative. Because the existing HOV lanes would be removed to provide space for the light rail trackway, right-of-way would need to be acquired from adjacent properties. In addition, retaining the HOV lanes would likely result in severe noise and vibration impacts at many properties. Since implementing this mitigation measure would have several adverse effects on adjacent properties, it is not considered feasible.

**Adverse effects. No feasible mitigation.**

Changes to Bus Travel Time

The Light Rail Alternative will have the following adverse effect on Bus users:

**Impact: Changes to Bus Travel Times**

Rapid 522 and Express Bus 103 currently use the HOV lanes along Capitol Expressway between Capitol Avenue and Eastridge Transit Center. In 2013, BRT is planned for the Capitol Expressway Corridor to upgrade existing service and add new service. Compared to the No-Build Alternative, bus travel times with the Light Rail Alternative are expected to increase by 24 percent in 2018 and 113 percent in 2035. This equates to a 1 minute 20 second increase in travel time in 2018 and a 5 minute 90 second increase in travel time in 2035.

A potential mitigation measure would be to replace the existing HOV lanes between Capitol Avenue and Tully Road that will be removed under the Light Rail Alternative. Because the existing HOV lanes would be removed to provide space for the light rail trackway, right-of-way would need to be acquired from adjacent properties. In addition, retaining the HOV lanes would likely result in severe noise and vibration impacts at many properties, Since implementing this mitigation measure would have several adverse effects on adjacent properties, it is not considered feasible.

## Adverse effects. No feasible mitigation.

Proposed Options

As described in Chapter 2, *Alternatives Analysis*, the Light Rail Alternative includes removal of Ocala Station as a design option. With this option, the effects on transportation in the 2018 and 2035 horizon years would be similar to the effects of the base design except that the Ocala Station would not be included in the Light Rail Alternative, but would remain as a BRT stop. A second design option of the Light Rail Alternative would not replace the sidewalk between Ocala Avenue and Foxdale Drive with a new multi-use path and landscaping. This option would minimize the property required from the backyards of the adjacent residences.

These options are discussed as follows.

**No Ocala Station Option**

Under 2018 and 2035 conditions, the No Ocala Station Option would result in similar traffic impacts to those described for the Light Rail Alternative with an Ocala Station.

**No Sidewalk between Ocala Avenue and Foxdale Drive Option**

This option would not replace the sidewalk along the west side of Capitol Expressway between Ocala Avenue and Foxdale Drive with a new multi-use path and landscaping for a distance of about 1,500 feet. While existing pedestrian facilities in this segment would not be enhanced, neither would they be reduced or eliminated.

Because these options would not worsen traffic conditions or change pedestrian circulation, they would not result in an adverse effect.

### *Cumulative Impacts*

Cumulative effects of the No-Build and Light Rail Alternative are described as follows.

No-Build Alternative

The No-Build Alternative would not contribute to cumulative impacts on traffic.

Light Rail Alternative

In combination with other reasonably foreseeable projects, the Light Rail Alternative will have the following cumulative impacts on parking:

### Impact: Insufficient Parking

In order to support existing and planned transit services along Capitol Expressway, VTA will be providing pedestrian improvements, including sidewalks, landscaping, and street lighting between Capitol Avenue and Quimby Road, as part of a locally funded project. This project will remove 24 of the 55 on-street parking spaces on the east side of South Capitol Avenue south of Bambi Lane. The Light Rail Alternative will remove an additional 15 on-street parking from this segment of South Capitol Avenue for a cumulative loss of 39 spaces. Based on a field investigation, this would result in a shortage of 19 spaces in this area. No adverse impact is expected as the adjacent developments are single family homes with garages and driveways, most of the on-street parking on the west side of South Capitol Avenue will be retained, and excess capacity exists on Bambi Lane and on South Capitol Avenue north of Bambi Lane.

At Eastridge Mall, VTA is proposing to reconstruct and rehabilitate Eastridge Transit Center as a separate project. This project will involve the loss of 350–400 parking spaces at the mall due to the relocation of the transit center, the relocation of Eastridge Ring Road, and the addition of pedestrian facilities along the Ring Road and to the eastern entrance of the mall. When combined with the estimated 135 parking spaces that will be needed for the Light Rail Alternative, the total loss of parking at the mall will be 485–535 spaces. Based on a review of aerial photographs from December 13 and 20, 2008, these spaces are not usually used due to their location far from the mall entrances. As a result, there is no adverse effect.

**No adverse effects. No mitigation required.**

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