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MEMORANDUM

Date: May 14, 2015

To: John Hesler, David J. Powers & Associates, Inc.

From: Katy Cole, Lindsey Hilde, Fehr & Peers

Subject: Old Mountain View-Alviso Road Bridge Replacement Project: Draft Transportation Evaluation

SJ15-1572

This memorandum is part of the environmental documentation for the Old Mountain View-Alviso Road Bridge Replacement Project ("Project"). This memorandum:

- Documents existing transportation conditions in the Project area.
- Describes transportation conditions during and after construction of the Project (including anticipated detour routes for vehicles, bicycles, and pedestrians).
- Identifies if the Project would cause significant transportation impacts during and after construction.

PROJECT DESCRIPTION

The proposed Project is the replacement of the existing Old Mountain View-Alviso Road Bridge over Calabazas Creek. This includes construction of a replacement bridge and roadway approaches that comply with current seismic safety and highway design standards to correct existing structural and roadway deficiencies. The replacement bridge will be constructed on the same alignment as the existing bridge and will be approximately 125 feet in length and 52 feet in width. The current bridge has two 14-foot vehicle travel lanes and does not have sidewalks or bicycle lanes. The bridge replacement will include two 12-foot vehicle travel lanes, two 8-foot bicycle lanes, and two 5-foot sidewalks.

Figure 1 shows the Project location. Calabazas Creek flows under the existing Old Mountain View-Alviso Road Bridge in a south-to-north direction. The Calabazas Creek Trail is located along the east side of the creek and passes under the bridge. The Santa Clara Valley Water District's (SCVWD) maintenance paths are located along both the east and west sides of Calabazas Creek. Old Mountain View-Alviso Road provides access to existing industrial land uses. State Route (SR) 237 is north of the Project site. The Santa Clara Convention Center and Levi's Stadium are located approximately one-mile from the Project.

During bridge construction, the following will be closed:

- Old Mountain View-Alviso Road will be closed to vehicular, bicycle, and pedestrian traffic between Reamwood Avenue and Patrick Henry Drive for approximately two to three months.
- The Calabazas Creek Trail will be closed to bicycle and pedestrian traffic between Tasman Drive and SR 237 for approximately three to four months.

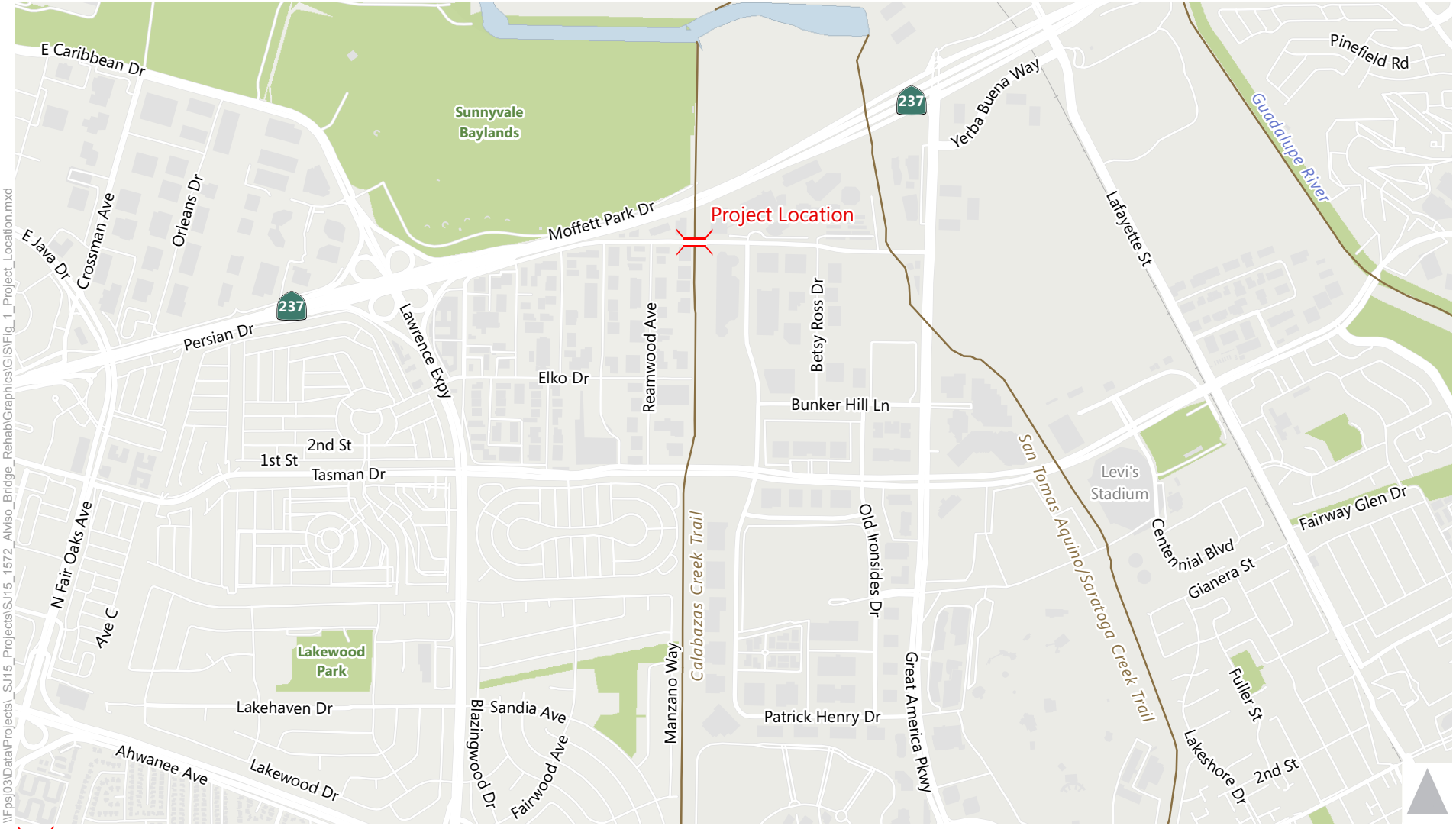


Figure 1

Project Location

EXISTING CONDITIONS

EXISTING STREET SYSTEM

The primary roadways in the Project area are Old Mountain View-Alviso Road, Reamwood Avenue, Patrick Henry Drive, and Tasman Drive and SR 237. These roadways are described below and shown on **Figure 1**. The pedestrian conditions (sidewalk coverage and crosswalk markings) are also described below. Existing bicycle facilities surrounding the Project are described in the next section.

- **Old Mountain View-Alviso Road** is an east-west, 2-lane, local roadway that extends from Great America Parkway in Santa Clara on the east to Lawrence Station Road in Sunnyvale to the west. There are sidewalks on both sides of Old Mountain View-Alviso Road east of the Calabazas Creek Bridge. There are no sidewalks west of the Calabazas Creek Bridge. There are Class II bike lanes on this roadway except on the Calabazas Creek Bridge.
- **Reamwood Avenue** is a north-south oriented, 2-lane local street located in Sunnyvale. It begins at Old Mountain View-Alviso Road and terminates at Tasman Drive and is mostly lined with industrial land uses. There are not continuous sidewalks on either side of Reamwood Avenue. Crosswalks are unmarked at the Reamwood Avenue / Old Mountain View-Alviso Road and Reamwood Avenue / Elko Road intersections (both are side-street stop controlled intersections). Crosswalks are marked at the Reamwood Avenue / Tasman Drive signalized intersection on all approaches.
- **Patrick Henry Drive** is a north-south oriented, 2-lane local street located in Santa Clara. It begins at Old Mountain View-Alviso Road and curves east, terminating at Great America Parkway south of Tasman Drive. Land uses along this street are large office buildings surrounded by surface parking lots. Most of Patrick Henry Drive lacks sidewalks. However, there are sidewalks on the west side of the street between Bunker Hill Lane and Tasman Drive. Crosswalks are marked on the east and south legs of the Patrick Henry Drive / Old Mountain View-Alviso Road intersection. There are three marked midblock crossings on Patrick Henry Drive between Old Mountain View-Alviso Road and Bunker Hill Lane. Crosswalks are marked at the Patrick Henry Drive / Tasman Drive intersection. Santa Clara Valley Transportation Authority (VTA) transit routes 57, 60, and 823 operate on Patrick Henry Drive.

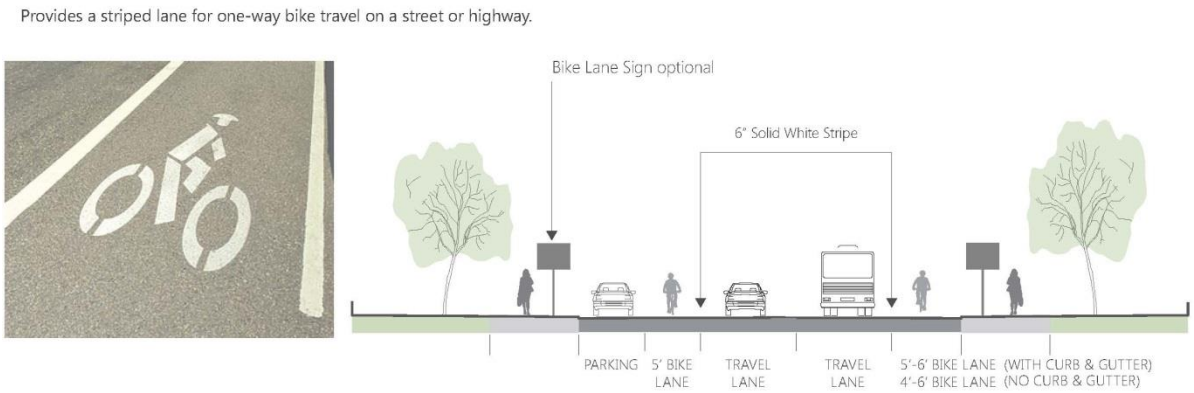
- **Tasman Drive** is an east-west oriented, four to six-lane east-west divided arterial with center-running, at-grade light rail (VTA light-rail Mountain View-Winchester route). Tasman Drive extends between I-880 in the east to Java Drive in the west. Tasman Drive provides the next available crossing over the Calabazas Creek Trail located south of the Project site.
- **SR 237** is an east-west oriented, six-lane, divided freeway that connects the east and west sides of Silicon Valley via Mountain View, Sunnyvale, Santa Clara and north San Jose. It is north of the Project site. The nearest SR 237 on-ramps / off-ramps to the Project are located at Lawrence Expressway and Great America Parkway.

EXISTING BICYCLE FACILITIES

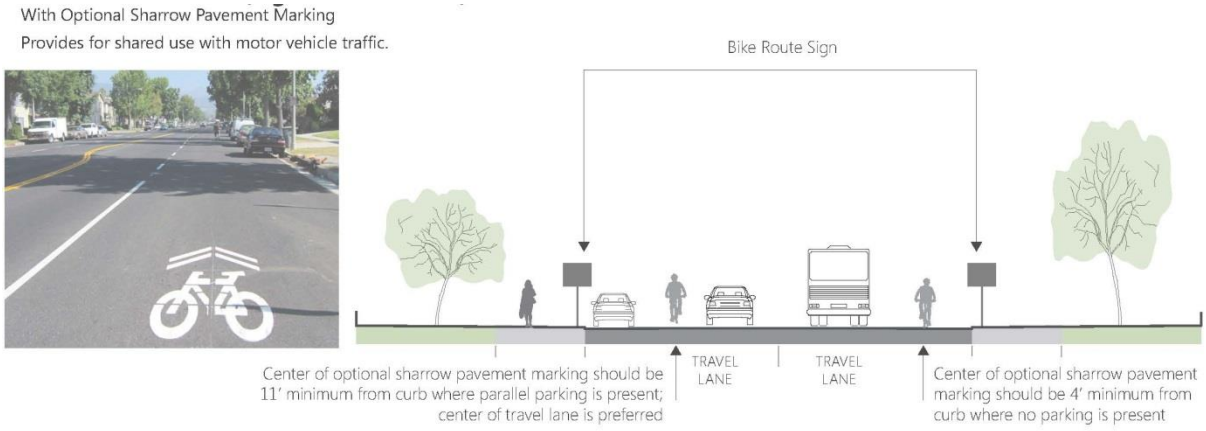
Bikeway planning and design in California typically relies on guidelines and design standards established by California Department of Transportation (Caltrans) in the *Highway Design Manual* (Chapter 1000: Bikeway Planning and Design). Caltrans provides for three distinct types of bikeway facilities, as described below and shown in the accompanying figures.

- *Class I Bikeway (Bike Path)* provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized. In general, bike paths serve corridors not served by streets and highways or where sufficient right-of-way exists to allow such facilities to be constructed away from the influence of parallel streets and vehicle conflicts.

- *Class II Bikeways (Bike Lanes)* are lanes for bicyclists generally adjacent to the outer vehicle travel lanes. These lanes have special lane markings, pavement legends, and signage. Bicycle lanes are generally five (5) feet wide. Adjacent vehicle parking and vehicle/pedestrian cross-flow are permitted.



- *Class III Bikeway (Bike Route)* are designated by signs or pavement markings for shared use with pedestrians or motor vehicles, but have no separated bike right-of-way or lane striping. Bike routes serve either to: a) provide continuity to other bicycle facilities, or b) designate preferred routes through high demand corridors.



There is one Class I bicycle path near the Project site: the Calabazas Creek Trail. This Trail forms the border between Sunnyvale and Santa Clara from Central Expressway to SR 237. North of SR 237, this Trail connects to the San Francisco Bay Trail, a regional, 340-mile shoreline walking and bicycling path that currently provides an almost continuous route encircling the San Francisco Bay.

Class II facilities near the Project site are located along:

- Old Mountain View-Alviso Road between Lawrence Expressway and Great America Parkway (currently, there are no bicycle lanes on the Calabazas Creek Bridge)
- Reamwood Avenue between Elko Road and Tasman Drive
- Elko Drive between Lawrence Station Road and the Calabazas Creek Trail

There are no Class III facilities located near the Project.

TRAFFIC VOLUMES

Daily traffic volume counts were conducted on Old Mountain View-Alviso Road between Reamwood Avenue and Patrick Henry Drive for a period of seven days beginning Sunday, March 29th and ending Sunday, April 5th. Directional tube counts (eastbound and westbound) were collected for a 24-hour period each day during the study period. A major event took place at the nearby Levi's Stadium on Sunday, March 29th – Wrestlemania 31. Counts were conducted on this date to capture "event day" conditions.

Weekday vehicle volumes on the Bridge are shown in **Table 1.** The average weekday traffic volumes on the Calabazas Creek Bridge is approximately 3,500 daily vehicles. This is a low vehicle volume in general, especially compared to nearby major arterials, like Tasman Drive, which carries approximately 13,200 daily vehicles. Daily traffic volumes were also obtained on Patrick Henry Drive from the Santa Clara Valley Transportation Authority (VTA) travel demand model for the "base year," which approximates existing conditions. The model indicates that there are approximately 5,200 daily vehicles on Patrick Henry Drive. Model volumes are not available for Reamwood Avenue; however, this is a local street that likely carries less traffic than Patrick Henry Drive.

TABLE 1: WEEKDAY DAILY TRAFFIC VOLUMES ON OLD MOUNTAIN VIEW-ALVISO ROAD BRIDGE

Period	Eastbound	Westbound	Total
Average Daily Volumes	1,642	1,870	3,512
AM Peak Hour (8:45-9:45)	187	92	279
Peak Period (4:45-5:45)	162	182	344

Source: Fehr & Peers, 2015; Counts conducted March 29 – April 5, 2015.

Weekend vehicle volumes on the Old Mountain View-Alviso Road Calabazas Bridge are presented in **Table 2.** Overall, weekend traffic volumes are very low, with approximately 730 daily trips on Saturday and 400 daily trips on Sunday (non-event). On Sunday, March 29th (day of Wrestlemania 31), daily volumes increased to 1,190, which is still considerably less than the average weekday traffic volumes.

TABLE 2: WEEKEND DAILY TRAFFIC VOLUMES ON OLD MOUNTAIN VIEW-ALVISO ROAD BRIDGE

Period	Eastbound	Westbound	Total
Saturday Daily Volumes	327	407	734
Sunday Daily Volumes (non-event) – April 5th	194	209	403
Weekend Event (Sunday) Daily Traffic Volumes – March 29th	413	779	1,192

Source: Fehr & Peers, 2015; Counts conducted March 29 – April 5, 2015.

TRANSPORTATION IMPACT ANALYSIS

Fehr & Peers evaluated transportation conditions under two scenarios: during construction and after construction.

TRANSPORTATION IMPACTS DURING CONSTRUCTION

During construction, Old Mountain View-Alviso Road will be closed to through traffic between Patrick Henry Drive and Reamwood Avenue and the Calabazas Creek Trail will be closed between Tasman Drive and SR 237 for approximately two to four months. Users will be re-routed to alternate routes during construction. Fehr & Peers concurs with the City's proposed detour route for vehicles which will utilize Reamwood Avenue, Patrick Henry Drive, and Tasman Drive, as shown on **Figure 2**.

Approximately 3,500 daily vehicles travel on Old Mountain View-Alviso Road over Calabazas Creek. During construction these vehicles will travel on Reamwood Avenue, Tasman Drive, and

Patrick Henry Drive. **Table 3** displays the estimated traffic volumes on each of the detour roadways during construction.

TABLE 3: DAILY TRAFFIC VOLUMES DURING PROJECT CONSTRUCTION

Roadway	Roadway Capacity[1]	Existing Daily Volume	Daily Volume During Project Construction
Old Mountain View-Alviso Road Calabazas Creek Bridge	15,000	3,500	0 (bridge is closed)
Reamwood Avenue (Tasman Drive to Old Mountain View-Alviso Road)	15,000	>5,000[2]	>8,500
Tasman Drive (Reamwood Avenue to Patrick Henry Drive)	27,400	13,000[3]	16,500
Patrick Henry Drive (Tasman Drive to Old Mountain View-Alviso Road)	15,000	5,200[2]	8,700

Notes: [1] Typical roadway capacity for the roadway type and number of travel lanes based on Federal Highway Administration Highway Capacity Manual, 2000.
[2] Daily volume counts were not conducted on this segment. This is an estimate based on the character of the roadway and the VTA travel demand model.
[3] Traffic volume counts collected in October 2014.
Source: Fehr & Peers, 2015; Counts on Old Mountain View-Alviso Road conducted March 29 – April 5, 2015.

As shown in **Table 3**, the roadways all operate well within the roadway's capacity. In addition, the intersections of Tasman Drive/Reamwood Avenue and Tasman Drive/Patrick Henry Drive are signalized, which can facilitate the turning movements on the detour route. Therefore, the Project has a less-than-significant impact on vehicle traffic during construction.

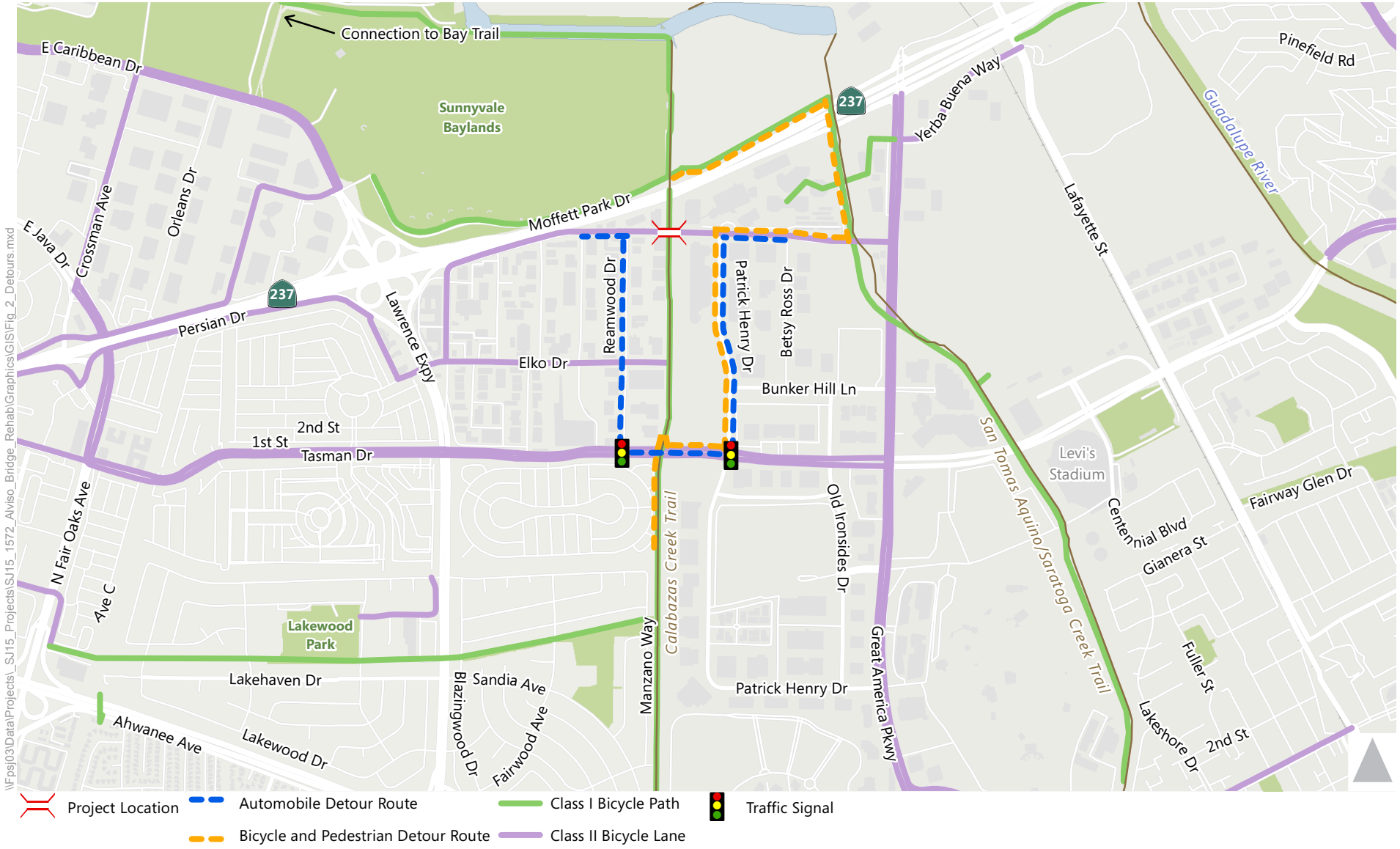


Figure 2

Automobile, Bicycle, and Pedestrian Detour Routes

For bicyclists and pedestrians on the Calabazas Creek Trail, we recommend the detour route depicted on **Figure 2.** This route would redirect bicyclists and pedestrians to the San Tomas Aquino Creek Trail, Patrick Henry Drive, and Tasman Drive and would maintain the connection from the Calabazas Creek Trail to the Bay Trail north of SR 237. The detour may result in a small increase in travel time for users; however, the trail will only be closed for three to four months and the detour route will maintain a continuous route for trail users. Therefore; the Project has a less-than-significant impact on bicycle/pedestrian traffic during construction.

To ensure that the impact is less-than-significant for vehicle, bicycle, and pedestrian traffic, we recommend that temporary detour signage is installed and maintained during construction for the vehicle, bicycle, and pedestrian detour routes.

TRANSPORTATION IMPACTS AFTER CONSTRUCTION

The new bridge will have two 12-foot vehicle travel lanes, two 8-foot bicycle lanes, and two 5-foot wide sidewalks. Since the new bridge will have the same number of travel lanes as the existing bridge, vehicle traffic will return to the pre-Project conditions. Therefore, the Project has no long term impacts on vehicle traffic.

The Project has a beneficial impact on bicycle and pedestrian travel since it adds bicycle lanes and sidewalks, which do not exist today. The addition of these facilities will fill in a gap in the bicycle and pedestrian network along Old Mountain View-Alviso Road.

The addition of sidewalks will improve connectivity across the bridge and possibly encourage more people who work in the surrounding office and industrial buildings to walk instead of drive for short trips (e.g. errands or lunch). Adding sidewalks also enhances connectivity to the trailheads at the bridge that lead down to the Calabazas Creek Trail.

CONCLUSION

The short-term closures of Old Mountain View-Alviso Road and the Calabazas Creek Trail during construction of the Project will reroute vehicle, bicycle, and pedestrian traffic resulting in small increases in travel time and distance. The detour routes have adequate capacity to accommodate the rerouted traffic. Therefore, the impact is less-than-significant. Once constructed, the Project has a beneficial impact to bicycle and pedestrian travel by providing bicycle lanes and sidewalks.