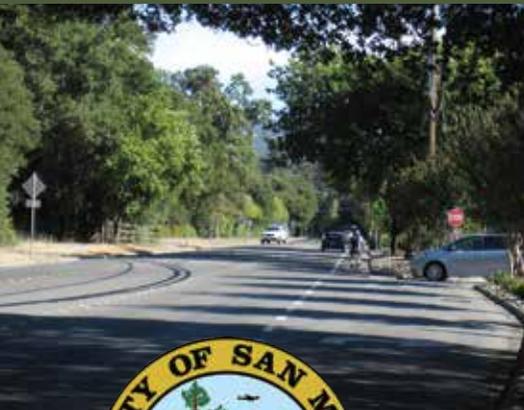




# Alpine Road

## CORRIDOR STUDY PROJECT

FINAL REPORT | MARCH 2017





# Alpine Road

## CORRIDOR STUDY PROJECT

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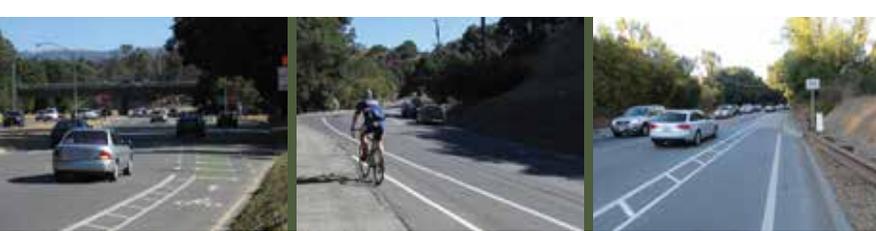
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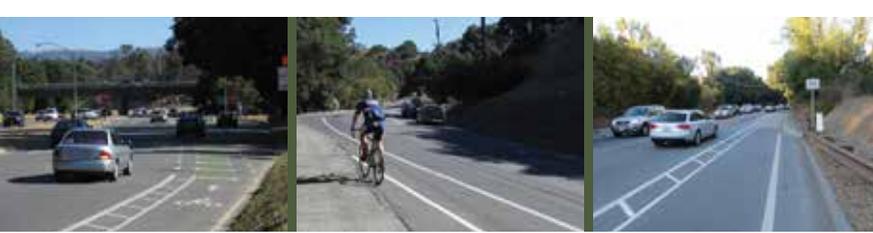
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# Alpine Road

## CORRIDOR STUDY PROJECT

## Executive Summary

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Alpine Road is a heavily utilized arterial in San Mateo County, California. By virtue of its intersection with Interstate 280, it provides regional access to and from Menlo Park, Stanford University, and Portola Valley. It also provides direct local access to the communities of Stanford Weekend Acres and Ladera, both located in unincorporated San Mateo County. It also serves as an access point for the Stanford Dish trail and the Stanford Linear Accelerator Center. It is used for access to Menlo Park and Stanford University to the north, and Portola Valley to the south. Alpine Road is generally one lane in each direction with a speed limit that varies between 35 and 45 miles per hour. A Class II bike lane with a 5-foot width exists on both sides of the roadway. The Alpine Road Trail roughly parallels the east side of Alpine Road and is a multi-use trail which varies in width throughout the corridor.

This study focused on a 1.8-mile stretch of Alpine Road which extends from the unincorporated San Mateo County/Menlo Park boundary (located approximately 1,500 feet south of Junipero Serra Boulevard) to the unincorporated San Mateo County/Portola Valley boundary (located approximately 1,000 feet south of La Mesa Drive). The study area is shown in Figure E-1.

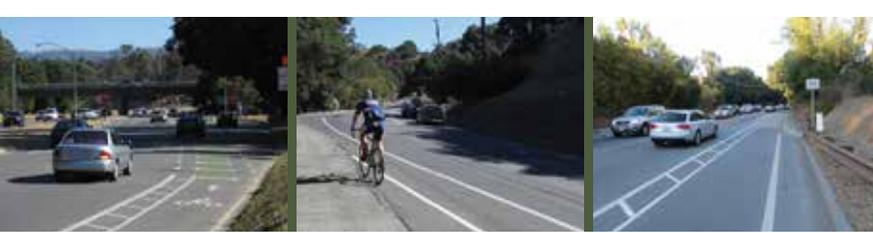
### Project Purpose

Currently, the study corridor serves more than 25,000 vehicles per day and operates at deficient levels during peak traffic periods. Significant delays are experienced in the southbound direction of Alpine Road north of I-280 during the afternoon and evening. Nearby employment growth, particularly in Menlo Park and near Stanford University, has increased traffic demand on Alpine Road while the configuration of the roadway has remained largely unchanged. Congestion at the I-280 interchanges on either side of Alpine Road (Sand Hill Road and Page Mill Road) significantly contributes to traffic volumes along the study corridor as Alpine Road is used as an alternative to those more trafficked roadways. Major challenges along the corridor created by the congestion include difficulty accessing and egressing side streets, and bicycle and pedestrian safety.

While the Alpine Road Trail extends along the entire east side of the study corridor, it has minimal facilities in several locations where the path is narrow, not to standard, or is uncomfortably close to vehicle traffic. The path is well distinguished near the I-280 interchange, in the Ladera Area, and north of Stowe Lane; however, in between those locations, the trail is narrow and has limited separation from the roadway.

Local residents have also expressed concerns about drivers speeding on the corridor during less congested periods, which negatively impacts safety along the corridor and makes it more difficult to access the corridor from side streets.

A number of major challenges constrain the project corridor. There is limited room to expand the roadway due to right-of-way constraints. Additionally, steep cross slopes, Los Trancos Creek, and San Francisquito Creek are physical obstacles which limit the feasibility of expanding or reconfiguring the existing roadway and bicycle/pedestrian facilities. Local residents cherish the rural character of the roadway and do not wish for significant capacity increases which may come at the cost of that character.



# Alpine Road

## CORRIDOR STUDY PROJECT

Based on input from the project stakeholders and the public, the following goals were identified for improvements to Alpine Road:

- Reduce congestion along Alpine Road and improve traffic operations and safety;
- Support safe and efficient bicycle, pedestrian, and transit facilities;
- For adjacent communities, improve access to and from Alpine Road;
- Maintain the rural character of the corridor; and
- Identify cost-effective solutions to address identified problems along the corridor.

### Baseline Conditions

Within the study area, Alpine Road is a heavily utilized arterial. It is used for access to Menlo Park and Stanford University to the north and Portola Valley to the south. Alpine Road has a signed speed limit of 40 miles per hour between the north end of the study corridor and I-280, 45 miles per hour from I-280 to between San Francisquito Creek Road and La Cuesta Drive, and 35 miles per hour from between San Francisquito Creek Road and La Cuesta Drive to the southern end of the study corridor. Warning signs indicate advisory speeds of 25 or 30 miles per hour near side-streets and along sharp curves.

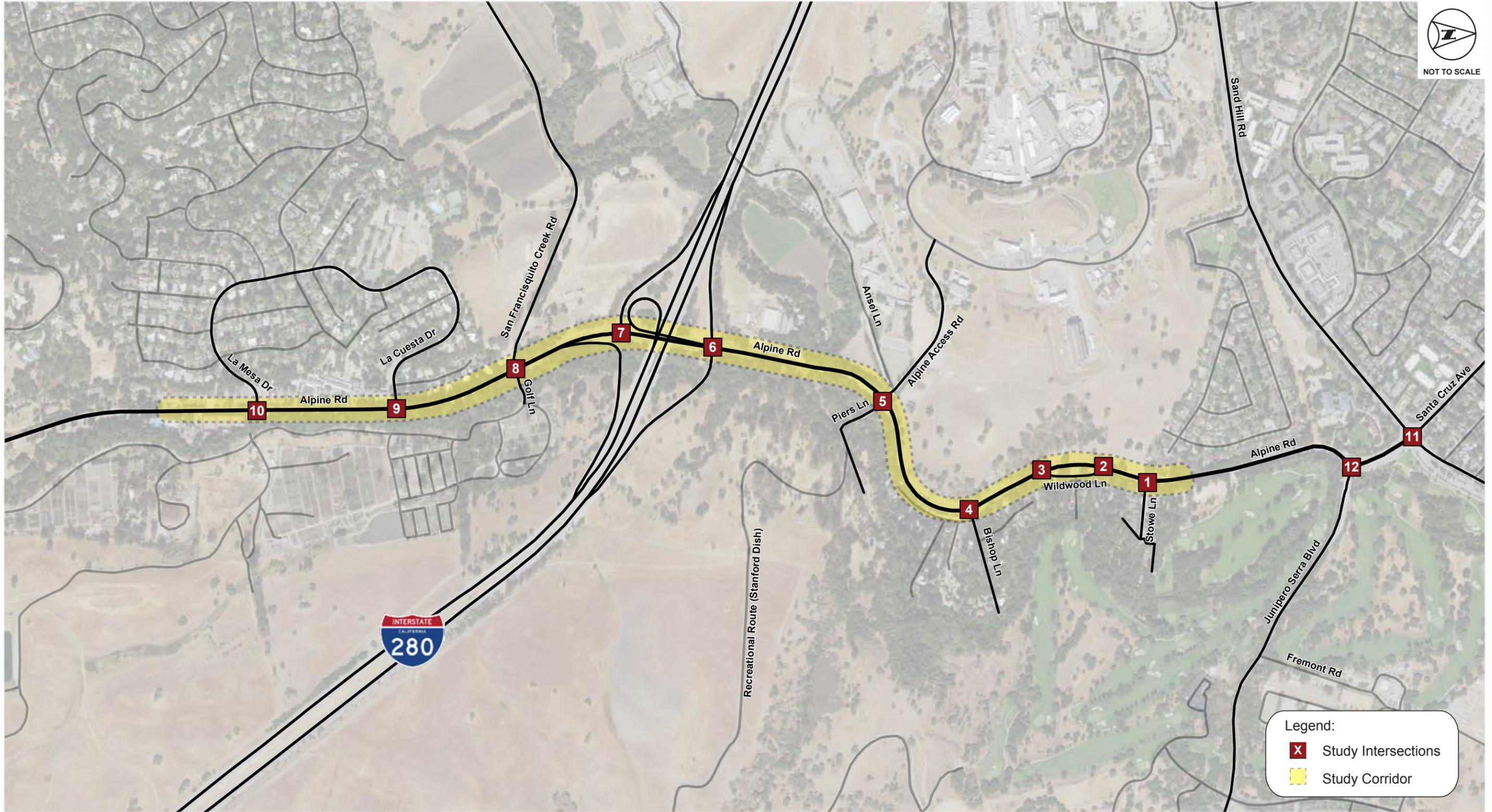
Traffic analysis indicates that locations north of I-280 experience high intersection delays, especially in the Mid-Day and PM peak hours. Travel times along the project corridor are highest in the southbound direction during the Mid-Day and PM peaks, primarily caused by the queuing at the I-280 interchange. Queues are known to extend from the I-280 northbound ramps north to Stowe Lane (0.8 miles), creating significant delay and increasing the difficulty of accessing the corridor.

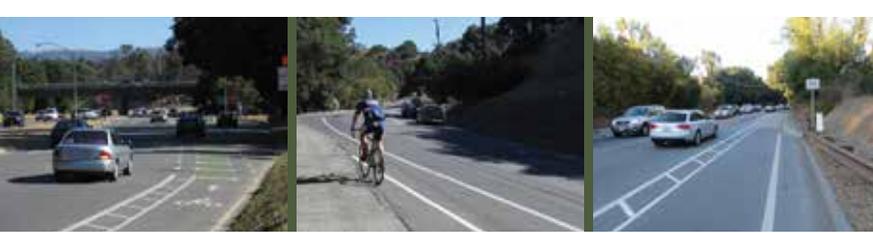
Alpine Road includes Class II bicycle lanes on both sides of the corridor. In the I-280 interchange area, the bike lanes are protected by a striped buffer and include green paint. Alpine Road is moderately utilized by cyclists during weekday peak hours, and is heavily utilized as a weekend recreational bicycle route, where “pelotons,” or groups of cyclists ride together.

The primary pedestrian facility along the study corridor is the Alpine Road Trail, which roughly parallels the east side of Alpine Road and is a multi-use trail which varies in width throughout the corridor. In some locations, this path is more akin to a wide shoulder than a pedestrian path.

# Alpine Road

## CORRIDOR STUDY PROJECT





# Alpine Road CORRIDOR STUDY PROJECT

## Concept Development and Analysis

The project team developed a list of improvements that would address the needs of the study corridor as defined by the baseline analysis and community input. A set of five distinct initial alternatives were developed based on various combinations of these improvements. One alternative consisted of minor improvements such as signing and striping, traffic calming, and improvements to bicycle/pedestrian facilities. The remaining four alternatives involved the installation of roundabouts or traffic signals at major study intersections and included more substantial circulation improvements to the corridor.

Conceptual layouts were developed for each of the five initial alternatives. The project team identified changes in circulation and traffic volumes associated with each of the alternatives and developed micro-simulation models to analyze intersection delay, corridor travel time, and intersection queuing.

The traffic analysis of all five alternatives found that the provision of either signals or roundabouts at the I-280 ramp intersections would significantly reduce delay at the other intersections along the corridor. The alternatives with signals were found to result in the highest reduction in delay and would have a greater capacity to handle high volumes of traffic; roundabouts would also significantly reduce delay, but would approach capacity in future scenarios. Roundabouts would result in slightly lower vehicle speeds in comparison to signals, benefitting safety Alpine Road. Signals would create vehicle platoons with each signal cycle, and thus create gaps in traffic that would better facilitate side-street access to Alpine Road. The quantitative analysis of the alternatives' traffic impacts was combined with community input and a qualitative analysis of each alternative's impact on bicycle/pedestrian safety, bicycle/pedestrian circulation, and vehicular safety to develop a preferred alternative.

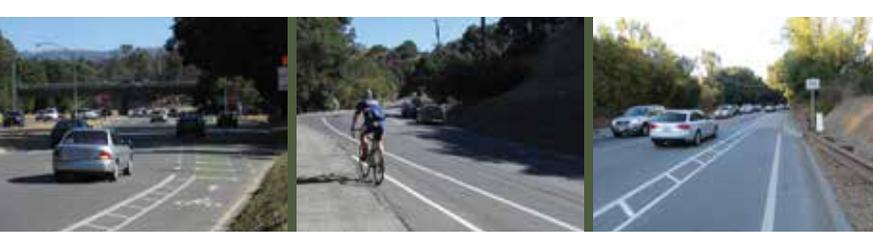
## Community Input

Public outreach was a critical element to this project. At all stages of the project, starting with identification of existing challenges and constraints, public and stakeholder input was sought and received. A total of three community meetings were held. Throughout the study, the project team coordinated with other stakeholders impacted by the study, including Caltrans, Stanford University, the City of Menlo Park, and the Town of Portola Valley.

The first community meeting was held in the early stages of the study to discuss the priorities of the community and needs of the corridor; the input received at this meeting shaped the development of the five initial improvement alternatives. At the second community meeting, community members provided feedback on the initial set of five alternatives. Attendees stressed the importance of bicycle and pedestrian safety, traffic calming, and side-street access. The input received from the community influenced the development of the final preferred alternative, which was presented at the third community meeting. At this meeting, community members provided feedback on the prioritization of improvements by ranking the individual improvements included in the preferred alternative.

Community feedback was also encouraged through online feedback forms before and after the community meetings and community e-mails received during the duration of the project. Community meetings were well attended with approximately 70-100 people at each meeting and an additional 219 survey responses and e-mails were received over the course of the project.

In addition to interactions with the public, the project team involved other stakeholder agencies and groups. The team held multiple meetings with Caltrans representatives to coordinate data collection, receive input on proposed improvements, and review analysis findings from the study. The team also received input on proposed improvements from Stanford University, the City of Menlo Park and the Town of Portola Valley.



# Alpine Road

## CORRIDOR STUDY PROJECT

### Preferred Alternative

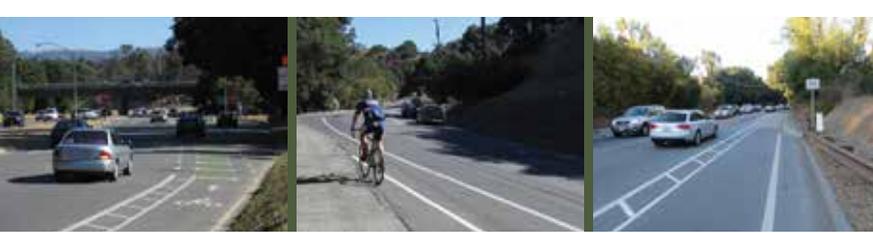
After evaluation of the five improvement concept alternatives and receiving community feedback, the project team consolidated various individual improvements from the five proposed alternatives to develop one preferred concept. Improvements were selected based on their ability to meet the project's objectives and based on community feedback. The improvements were grouped into two phases. Phase 1 includes minor and lower-cost improvements that can be implemented on a near-term basis. These improvements are illustrated in Figure E-2. Phase 2 includes larger improvements that will need to be implemented long-term due to their higher cost, environmental requirements, or other administrative requirements such as coordination with Caltrans. These improvements are illustrated in Figure E-3. Additionally, a set of alternate improvements were developed for select locations in Phase 2 to allow for flexibility in choosing long-term improvements. These alternate improvements are illustrated in Figure E-4. The alignment of the proposed improvements with project goals is identified below:

#### Reduce congestion along Alpine Road and improve traffic operations and safety:

- Restricting the gas station driveway at Alpine Road/La Cuesta Drive to fuel delivery trucks only will improve vehicular safety by eliminating a conflict point at an intersection (impacts private property)
- New traffic signals at the two I-280 ramp intersections will reduce vehicle delay and queuing throughout the study corridor
- New and extended turn and acceleration lanes at various intersections along the study corridor would reduce speed conflicts and facilitate side-street access
- Reducing the speed limit to 35 miles per hour throughout the corridor will reduce vehicle speeds, improving safety for all users (near term – approved January 2017)

#### Support safe and efficient bicycle, pedestrian, and transit facilities:

- Closure of the right-out only Ladera Country Shopping driveway will reduce conflicts between vehicles and bicycles while also improving vehicle safety (impacts private property)
- Shifting the existing crosswalk south of La Mesa Drive to the Ladera Professional Center driveway would enhance pedestrian safety and visibility
- Reduced speed limits and speed feedback signs will help to calm traffic and provide a safer bicycle and pedestrian environment (near term – approved January 2017)
- Rapid Rectangular Flashing Beacons (RRFBs) and pedestrian-scale lighting at three crosswalks would improve pedestrian visibility and vehicle yielding (near term – construction February 2017)
- Dashed green paint in conflict areas throughout the corridor will increase yielding to cyclists and reduce vehicle intrusion into bicycle lanes
- Extension of the existing buffered bike lanes will improve bicycle comfort and reduce vehicle intrusion into the bicycle lanes
- New bike slots at intersections will reduce conflict between bicyclists and right-turning vehicles
- Extension of the existing guard rail between Piers Lane and Bishop Lane will enhance pedestrian safety by providing physical separation between pedestrian and vehicle facilities (near term – scheduled Summer 2017)
- Restriping of the roadway between Stowe Lane and Wildwood Lane will eliminate a pinch point in the bicycle lane in that area
- Removal of the free right-turn from the I-280 southbound off-ramp to southbound Alpine Road will improve



# Alpine Road

## CORRIDOR STUDY PROJECT

crossing safety for bicycles and pedestrians

- An extension of the multi-use path north of Stowe Lane will enhance pedestrian and bicycle connectivity and circulation along the corridor (near term – scheduled Summer 2017)
- Improvements to the northbound bus stop at Stowe Lane will improve comfort and safety for transit riders

### **Improve access to Alpine Road from adjacent communities:**

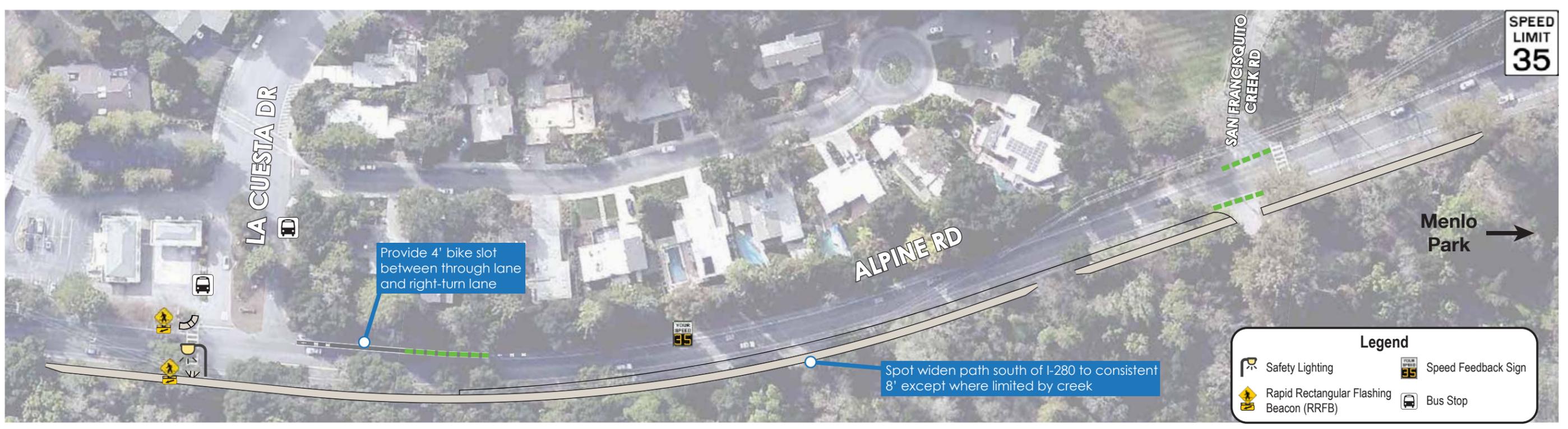
- Striping “Keep Clear” zones at the four intersections north of I-280 will alert drivers on Alpine Road to the presence of turning vehicles and facilitate better access between Alpine Road and side streets (near term – scheduled 2017)
- New roundabouts at La Mesa Drive and La Cuesta Drive will improve access to Alpine Road from the side streets in the Ladera Area
- New traffic signals at the I-280 ramp intersections will provide gaps in traffic that will enable side-street access to Alpine Road at downstream intersections
- New and extended turn and acceleration lanes at various intersections along the study corridor will improve side-street access
- A new, single consolidated access point to Wildwood Lane, combined with a two-way left-turn lane, will facilitate better access to/from Alpine Road

### **Maintain the rural character of the corridor:**

- New roundabouts at La Mesa Drive and La Cuesta Drive will provide traffic and safety benefits while aligning with the rural aesthetic and character of the neighborhood
- Various pedestrian improvements to the corridor will improve the neighborhood aesthetic of the corridor (near term – scheduled Summer 2017)
- Reduction of the speed limit and new speed feedback signs will potentially reduce speeds and enhance the residential feel of the corridor (near term – approved January 2017)

# Alpine Road

## CORRIDOR STUDY PROJECT



# Alpine Road

## CORRIDOR STUDY PROJECT



# Alpine Road

## CORRIDOR STUDY PROJECT

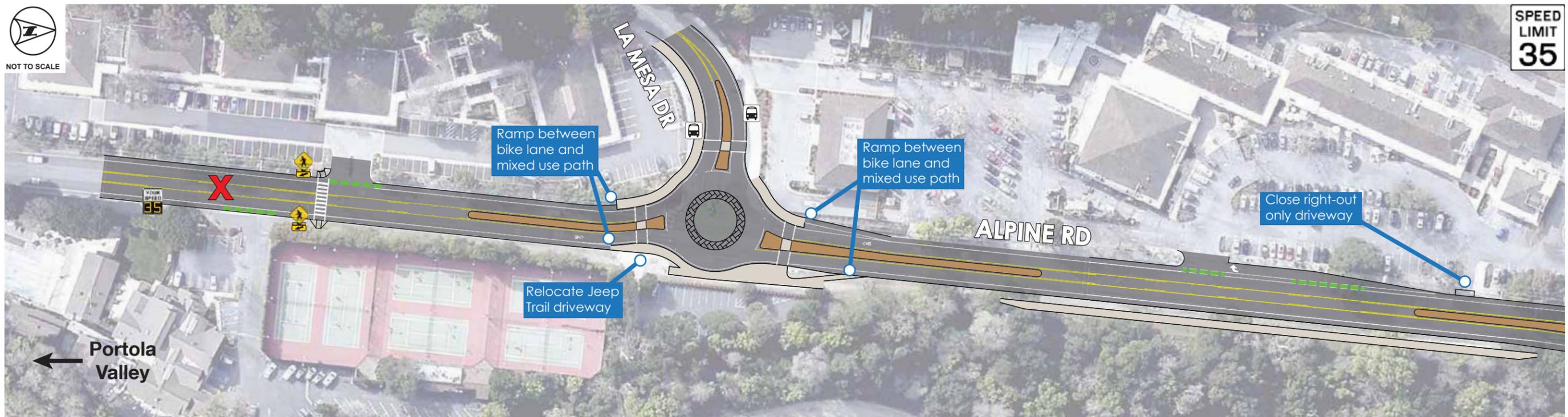


NOT TO SCALE

Legend	
	Safety Lighting
	Rapid Rectangular Flashing Beacon (RRFB)
	Speed Feedback Sign
	Bus Stop

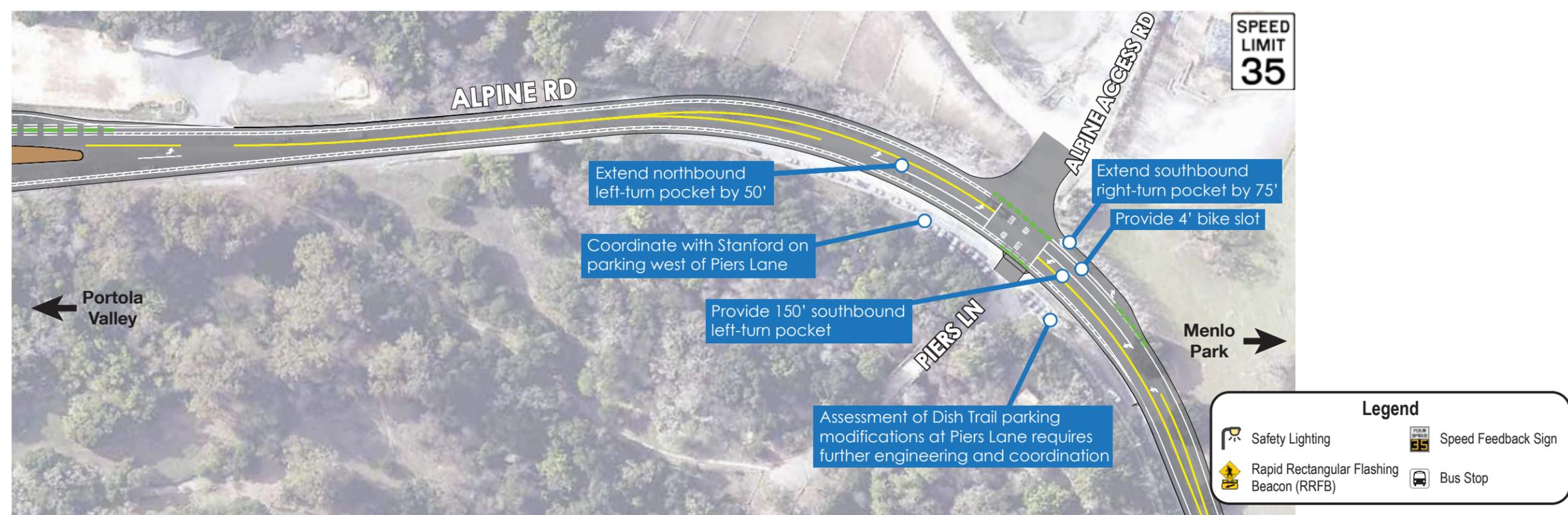
# Alpine Road

## CORRIDOR STUDY PROJECT



# Alpine Road

## CORRIDOR STUDY PROJECT



**Legend**

- Safety Lighting
- Rapid Rectangular Flashing Beacon (RRFB)
- Speed Feedback Sign
- Bus Stop

# Alpine Road

## CORRIDOR STUDY PROJECT



Legend	
	Safety Lighting
	Rapid Rectangular Flashing Beacon (RRFB)
	Speed Feedback Sign
	Bus Stop



NOT TO SCALE

# Alpine Road

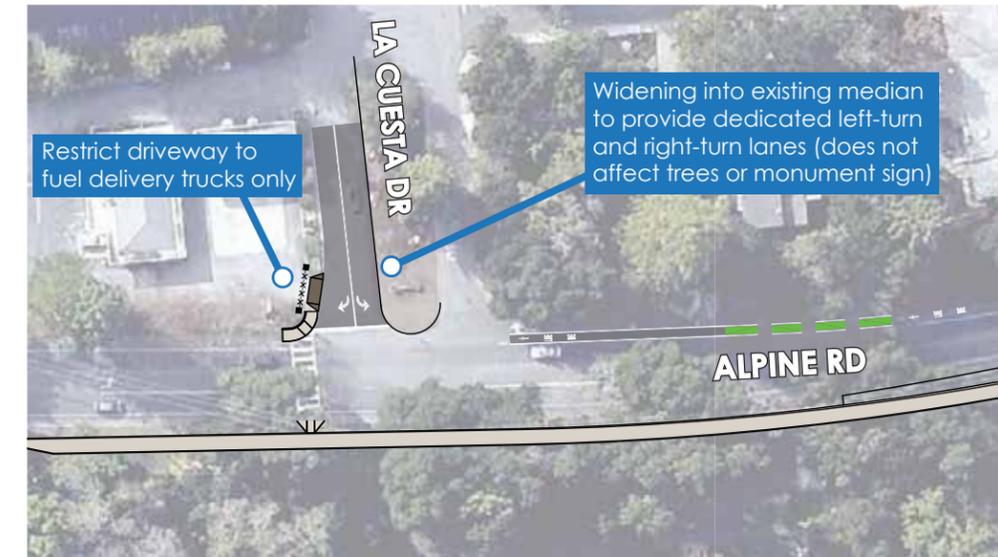
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Center Turn Lane at Wildwood Lane (No Consolidated Driveway Access)

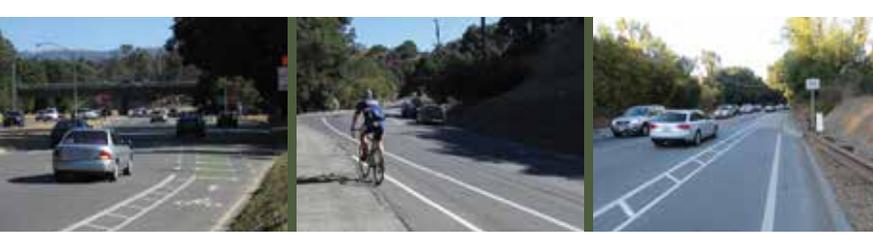


Add Turn Lanes on La Cuesta



Roundabouts at I-280 Ramps





# Alpine Road

## CORRIDOR STUDY PROJECT

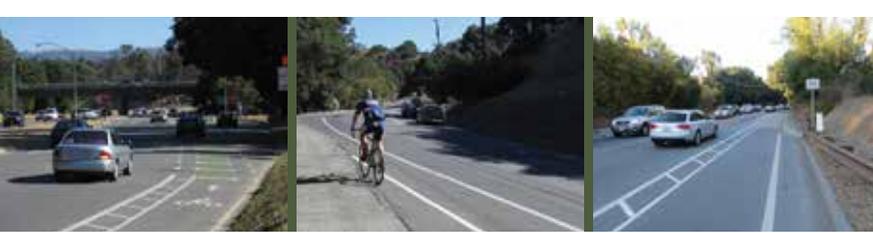
### Prioritization

At the third and final community meeting, attendees were asked to rank the improvements included in Phase 1 and Phase 2 of the preferred alternative to indicate which improvements should receive higher priority as San Mateo County staff implements them.

Based on community responses, the priority of improvements for Phase 1 is listed in Table E-1 and for Phase 2 in Table E-2. Improvements have been sorted into tiers to indicate the general preferences of the community that were expressed at the meeting.

*Table E-1: Prioritization of Phase 1 Improvements*

Improvement	Description
<b>Tier 1</b>	
Reduce speed limit	Reduce the speed limit along the entire study corridor to 35 miles per hour.
Keep Clear Zones at Piers Lane, Bishop Lane, Wildwood Lane, & Stowe Lane	Stripe “Keep Clear” zones on Alpine Road at the four intersections north of I-280.
Install pedestrian-level lighting and RRFBs at crosswalks at La Mesa Drive and at La Cuesta Drive	Install rapid rectangular flashing beacons (RRFBs) and pedestrian-level lighting at the existing crosswalks at La Mesa Drive and La Cuesta Drive. RRFBs are pedestrian activated, so the lights only turn on when a pedestrian is present. Install pedestrian ramps where they do not exist.
Install speed feedback signs in Stanford Weekend Acres Area (2 locations)	Install 2 speed feedback signs (one in each direction) on Alpine Road near Wildwood Lane.
Install speed feedback signs in Ladera Area (2 locations)	Install 2 speed feedback signs (one in each direction) around the La Mesa Drive and La Cuesta Drive intersections.
<b>Tier 2</b>	
Shift roadway to widen bike lane to 5' (striping change only)	Restripe roadway between just north of Stowe Lane and Wildwood Lane to allow for a consistent 5-foot wide bike lane on both sides of the road.
Green bike lane striping (Stanford Weekend Acres Area)	Stripe green paint in bike lanes in areas where bike lanes conflict with car traffic.
Bike lane buffer extension to Piers Lane	Extend the existing bike lane buffer (located at the I-280 Interchange) north to the Piers Lane intersection. The bike lane buffer provides a striped separation between the auto travel lane and the bike lane.
Extend guardrail south of Bishop Lane	Extend the existing guardrail, or provide some other form of channelization, on the east side of Alpine Road south from its current end towards Piers Lane.
Bike slots at intersections and green paint in conflict areas (Ladera Area)	Modify striping to add a bike slot in three locations on southbound Alpine Road: La Mesa Drive, La Cuesta Drive, and the right-turn lane into Ladera Country Shopper. A bike slot is a striped bike lane between the through lanes and the right-turn lane provides a lane of travel for bicyclists. Stripe green paint in bike lanes in areas where bike lanes conflict with car traffic.



# Alpine Road

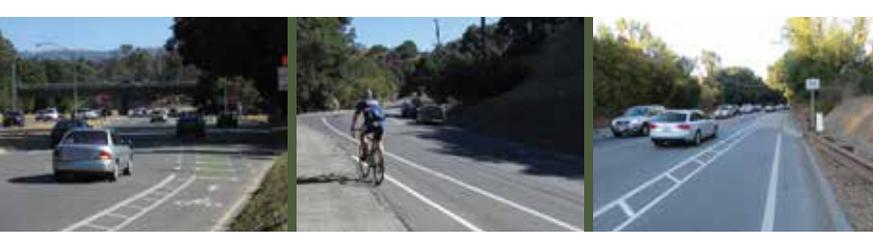
## CORRIDOR STUDY PROJECT

Improvement	Description
General path widening (Ladera Area)	Widen off-street trail to a consistent 8' on the east side of Alpine Road between La Mesa Drive and the I-280 Interchange. Path would not be widened in areas constrained by San Francisquito Creek.
Enhance/shift crosswalk south of La Mesa Drive	Relocate the existing crosswalk located just south of the Ladera Oaks Fitness Club driveway to the north side of the driveway, connecting to the shopping center driveway across the street. Install rapid rectangular flashing beacons (RRFBs) and lighting at the crosswalk and add pedestrian ramps.

Note that all Phase 1 improvements listed in Table E-1 were desired by the community to be implemented in the short-term. The County may endeavor to implement these improvements as money and resources become available.

*Table E-2: Prioritization of Phase 2 Improvements*

Improvement	Description
<b>Tier 1</b>	
Signals at I-280 ramps Alternate: Roundabouts	Install traffic signals at the I-280 northbound and southbound ramp intersections.
On-Street Path Extension to Stowe Lane	Alternate: Construct two-lane roundabouts at the I-280 northbound and southbound ramp intersections. Would preclude the removal of the free southbound on-ramp. Bike lanes would connect to mixed-use paths at the roundabouts.
Roundabout at La Cuesta Drive Alternate: Add turn lanes on La Cuesta Drive	Construct a single-lane roundabout at La Cuesta Drive. Bike lanes would connect to mixed-use paths at the roundabouts.  Alternate: Leave the intersection control as is (stop sign on La Cuesta Drive). Modify median to widen eastbound La Cuesta Drive to provide dedicated left-turn and right-turn lanes (widening would not impact trees or the existing monument sign in the median).
Extend acceleration lane and turn pockets at Stowe Lane and Bishop Lane	Lengthen the acceleration lanes and turn pockets on Alpine Road at Stowe Lane and Bishop Lane.
Restrict gas station exit at La Cuesta Drive	Restrict the gas station exit driveway located at the corner of La Cuesta Drive and Alpine Road to fuel delivery trucks only.
<b>Tier 2</b>	
Bike lane buffer extension to La Cuesta Drive	Extend the existing bike lane buffers (located at the I-280 Interchange) south to the La Cuesta Drive intersection.
Convert free right-turn at southbound off-ramp to stop control	Remove the free right-turn from the I-280 southbound off-ramp to southbound Alpine Road by bringing the right-turn lane to the intersection. Would be stop-controlled or signal-controlled (the latter only if the I-280 ramps are signalized).



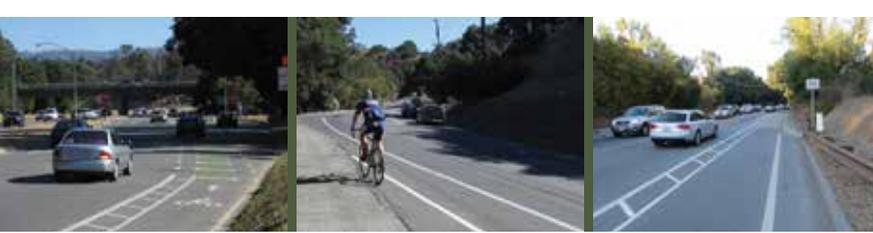
# Alpine Road

## CORRIDOR STUDY PROJECT

Improvement	Description
Left-turn lanes and bike slot at Piers Lane	Provide a 150' southbound left-turn pocket at Piers Lane. Extend the existing northbound left-turn pocket by 50'. Extend the existing southbound right-turn pocket by 75'. Provide a 4' bike slot between the southbound right-turn pocket and the through lanes.
Consolidate driveway access at Wildwood Lane  Alternate: Two-way left-turn lane median at Wildwood Lane	Close the two existing Wildwood access points to Alpine Road and provide one access point to Wildwood Lane. Provide a 100' left turn lane on southbound Alpine Road. Provide a center turn lane on Alpine Road adjacent to Wildwood Lane and extending to Stowe Lane.  Alternate: Leave the two existing Wildwood Lane access points as is. A center turn lane would still be provided to enable side-street access.
Roundabout at La Mesa Drive  Remove free southbound on-ramp from northbound Alpine Road	Construct a single-lane roundabout at La Mesa Drive. Bike lanes would connect to mixed-use paths at the roundabouts. Relocate the Jeep Trail driveway to a location that does not conflict with the roundabout.  Eliminate the free right-turn on-ramp from northbound Alpine Road to southbound I-280. This ramp would be replaced by providing a left-turn lane from northbound Alpine Road to the loop ramp to southbound I-280.
<b>Tier 3</b>	
Close one right-out only Ladera Country Shopper access driveway	Close the right-out only driveway which exits the Ladera Country Shopper center to southbound Alpine Road just south of La Cuesta Drive.
Extend northbound on-ramp merge lane	Extend the merge lane on the northbound I-280 on-ramp.
Improve northbound bus stop at Stowe Lane	Stripe a designated pullout area for buses to pull over on northbound Alpine Road, just north of Stowe Lane, outside of the flow of traffic. Provide bench and paved waiting area for waiting passengers.
Dish Trail parking area modification (see note below)	Pave and stripe parking lot on County right-of-way at Piers Lane with designated stalls. Provide driveway to parking area from Alpine Road. Prohibit parking along Alpine Road in areas without marked stalls.

*Note: The Dish Trail parking area modification was presented to the community in Community Meeting #3. Subsequent engineering investigation identified that there was limited area within the public right-of-way at Piers Lane for designated parking stalls. Engineering survey would be required to assess the feasibility of providing an off-street parking area on public lands.*

Feedback from the final public meeting indicated a preference for the improvements originally in Phase 2 as opposed to any of the alternate improvements.



# Alpine Road

## CORRIDOR STUDY PROJECT

## 1. Introduction

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### 1.1. Study Area

This study focused on a 1.8-mile stretch of Alpine Road which extends from the unincorporated San Mateo County/City of Menlo Park boundary (located approximately 1,500 feet south of Junipero Serra Boulevard) to the unincorporated San Mateo County/Town of Portola Valley boundary (located approximately 1,000 feet south of La Mesa Drive). The study area is shown in Figure 1-1.

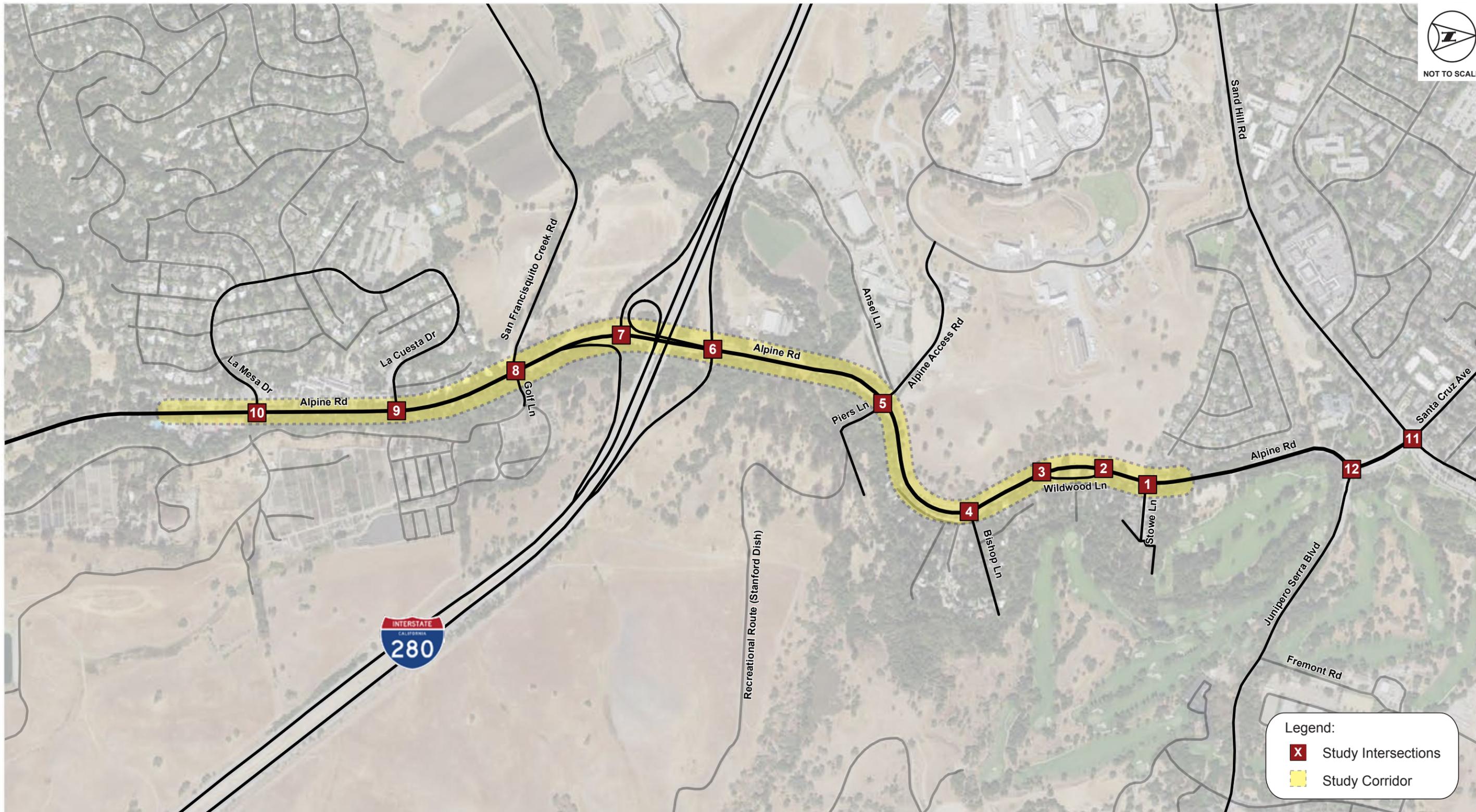
Within the study area, Alpine Road is a heavily utilized arterial. It intersects with Interstate 280, providing access to and from major destinations throughout the San Francisco Bay Area. Adjacent to Alpine Road are the Ladera and Stanford Weekend Acres residential neighborhoods, a neighborhood shopping center south of I-280, and abundant open space, contributing to the rural character of the area. It is used for access to Menlo Park and Stanford University to the north, and Portola Valley to the south. It also serves as an access point for the Stanford Dish trail and the Stanford Linear Accelerator Center.

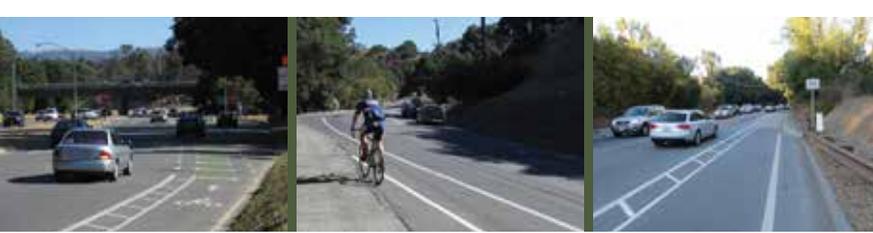
The arterial is generally one lane in each direction with a speed limit that varies between 35 and 45 miles per hour throughout the study corridor. A Class II bike lane with an approximately 5-foot width exists on both sides of the roadway. The Alpine Road Trail roughly parallels the east side of Alpine Road and is a multi-use trail which varies in width throughout the corridor. The major arterials Junipero Serra Boulevard and Sand Hill Road intersect Alpine Road.



# Alpine Road

## CORRIDOR STUDY PROJECT





# Alpine Road

## CORRIDOR STUDY PROJECT

### 1.2. Project Need & Objectives

Currently, the study corridor serves more than 25,000 vehicles per day, resulting in congestion and lengthy queuing during the morning and evening peak periods. Significant delays are experienced in the southbound direction north of I-280 during the afternoon and evening. Furthermore, with development expected to continue in areas north of the corridor, traffic volumes are projected to increase in the future. This will further exacerbate existing congestion, increasing delays and travel time. Community residents have expressed concern about the difficulty of turning out of driveways and unsignalized side-streets onto Alpine Road. This difficulty will only increase with the projected growth in volumes.

SamTrans Routes 86 and 87 operate on the Alpine Road corridor and provide transit to local schools and other destinations. Like autos, buses are delayed by the significant congestion on Alpine Road. This impacts the desirability of transit. Reducing congestion on Alpine Road would additionally serve to benefit transit service.

The primary pedestrian facility along the study corridor is the Alpine Road Trail, a multi-use path which roughly parallels the east side of Alpine Road. In some locations, the pedestrian facilities are more akin to a wide shoulder than a pedestrian path, and provide little to no separation between pedestrians and vehicle traffic. High speeds along the corridor contribute to pedestrian discomfort.

Local residents have also expressed concerns about drivers speeding on the corridor during less congested periods, which negatively impacts safety along the corridor and makes it more difficult to access the corridor from side streets.

A number of major challenges constrain the project corridor. There is limited room to expand the roadway due to right-of-way constraints. Additionally, steep cross slopes, Los Trancos Creek, and San Francisquito Creek are physical obstacles which also limit the feasibility of expanding or reconfiguring the existing roadway and bicycle/pedestrian facilities.

Based on input from the project stakeholders and the public, the following set of goals, and associated baseline challenges, were identified for improvements to Alpine Road:

- Reduce congestion along Alpine Road and improve traffic operations and safety;
- Support safe and efficient bicycle, pedestrian, and transit facilities;
- For adjacent communities, improve access to and from Alpine Road;
- Maintain the rural character of the corridor; and
- Identify cost-effective solutions to address identified problems along the corridor.



# Alpine Road CORRIDOR STUDY PROJECT

## 2. Project Methodology

### 2.1. Project Process

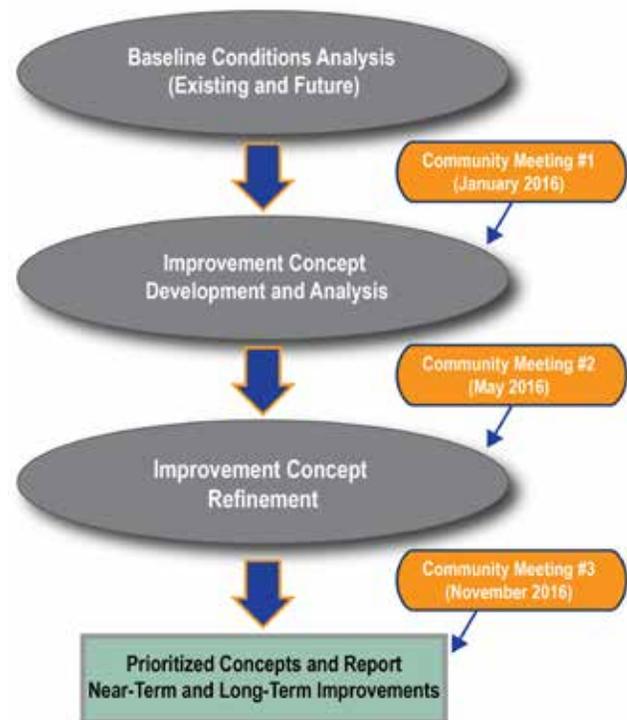
The project was completed following the general process shown in Figure 2-1. Technical analysis and community input were used to identify the greatest needs and then identify a recommended set of improvements.

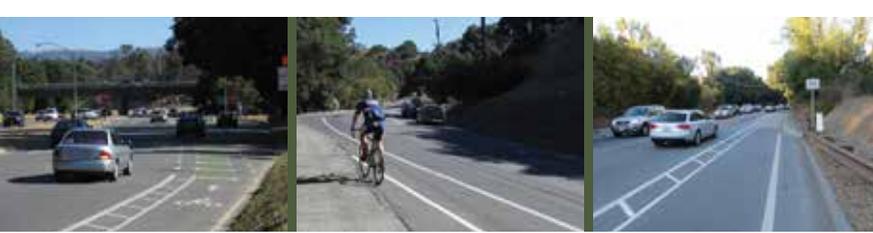
The project team analyzed existing and projected future conditions along the corridor to determine corridor needs and potential areas of improvement. Community input on project priorities, corridor problem spots, and improvement needs was received in the first community meeting.

Based on public and stakeholder input on project needs and potential types of improvements, an initial set of five improvement concept alternatives were developed. Conceptual layouts drawn over aerial imagery were prepared for each alternative to assess feasibility and define the configuration of the improvement alternatives. Improvement concepts were analyzed using a micro-simulation model of the entire study area. The micro-simulation model fully accounted for the several modes that utilize the corridor, as well as upstream and downstream congestion. It discretely models each user and each intersection, allowing for a real-world evaluation of the complex multi-modal interactions occurring throughout the corridor. The first step was to build a model that was calibrated to existing conditions and included existing traffic signal parameters. To represent future conditions, traffic, pedestrian, and bicycle volumes were increased to match future projected volumes. Finally, each of the proposed improvement alternatives were modeled to understand the ramifications of the alternatives on congestion, delay, queues, and multi-modal interactions. The improvement alternatives along with the analysis results were presented to the community in a second community meeting. At that meeting, the community provided feedback on each potential improvement concept.

After the second community meeting, the project team selected preferred individual improvements from the initial set of five alternatives to create one preferred concept alternative. Individual improvements were selected based on the evaluation of the project team and based on input from the community. The preferred alternative was split into two phases. Phase 1 includes minor and lower-cost improvements that can be implemented in the near-term with anticipated funding levels. Phase 2 includes larger improvements that will need to be implemented over a longer term due to their demand for funding or additional steps prior to implementation (environmental analysis, stakeholder coordination). Conceptual layouts drawn over aerial imagery were prepared for each phase to obtain consensus on the characteristics of the concept and to share the concept with the public. The final community meeting as part of this study was used to obtain input on which individual improvements in the preferred alternative should be prioritized for implementation.

Figure 2-1: Project Flow Chart





# Alpine Road

## CORRIDOR STUDY PROJECT

### 2.2. Data Collection

The County of San Mateo provided historical volume data for the study intersections from November 2011, April 2012, and February 2013. The County also provided historical speed data for various locations along the study corridor collected between 2008 and 2013. New traffic volume data was collected for this study in October and November 2015. Auto, bike, and pedestrian counts were collected for all project study intersections, including two intersections located outside of the project study area (Alpine Road/Junipero Serra Boulevard and Santa Cruz Avenue/Sand Hill Road) and along Sand Hill Road. Intersection counts were collected during AM (7-9AM), Mid-Day (2-4PM), and PM (4-6PM) peak periods. New speed survey data was collected in October 2015 at the following locations and times along the corridor:

- Between Bishop Lane and Wildwood Lane (collected 9:45 AM – 10:20 AM);
- Between I-280 and Alpine Access Road (collected 10:45 AM – 11:30 AM);
- Between San Francisquito Creek Road and I-280 (collected 11:50 AM – 12:35 PM); and
- 200 feet south of La Mesa Drive (collected 12:55 PM – 1:40 PM).

Speed data was collected in the mid-day period to measure free flow speeds on the corridor when not limited by peak congestion. 24-hour vehicle classification counts at three locations along the corridor were also collected over seven days in November 2015. Saturday and Sunday directional bicycle counts were collected in April 2016 between I-280 and San Francisquito Creek Road from 8 AM to 6 PM. Raw intersection turning movement counts, 24-hour volumes, and speed survey data can be found in Appendix A.

The City of Menlo Park provided Kimley-Horn with current traffic signal timing sheets for use in the analysis models. Santa Clara Valley Transportation Authority (VTA) modeling staff utilized the joint VTA-City/County Association of Governments (C-CAG) model to provide AM, mid-day, and PM model peak hour forecast plots of the study area for the baseline and horizon year (2040) scenarios. The models were reviewed and refined to reflect reasonably expected roadway geometrics in the vicinity of the study area.

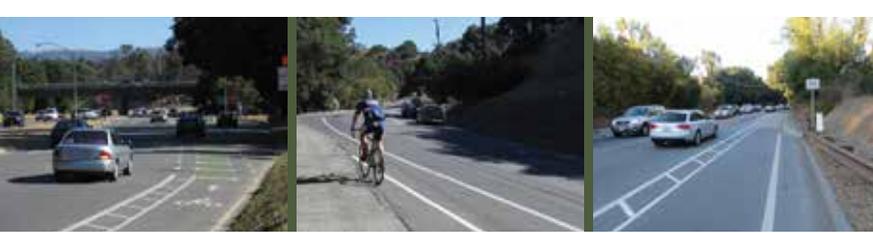
The County provided aerial imagery and GIS-based parcel and roadway centerline data to Kimley-Horn for this project. Historical collision data for the study corridor was obtained from the Statewide Integrated Traffic Records System (SWITRS) for the five-year period beginning January 1, 2011 and ending December 31, 2015.

Kimley-Horn performed site visits to observe corridor conditions in the morning and evening peak hours, document existing intersection and roadway geometrics, and conducted a utility field review of the area noting observable above ground utility features.

The County also provided plans for the Alpine Road Trail Improvements project.

### 2.3. Analysis Scenarios

Traffic analysis of the improvement concept alternatives developed for this study was performed for three scenarios: Baseline (2015), Near-Term (2020), and Long-Term (2040). Within each analysis scenario, conditions were analyzed for peak hours during the AM (7-9AM), Mid-Day (2-4PM), and PM (4-6PM) periods. The period from 2-4PM was selected as the Mid-Day peak period to reflect activity generated by school-related traffic. The 24-hour vehicle counts collected as part of this study confirmed that the periods selected for peak hour analysis included the periods with the highest volumes.



# Alpine Road

## CORRIDOR STUDY PROJECT

### 2.4. Improvement Scenarios

After gathering background information, collecting community input, and performing a baseline analysis, Kimley-Horn developed a list of potential corridor improvements. The list included a variety of solutions that could be feasible for implementation along Alpine Road. Kimley-Horn consulted recent research, recent projects in the region, and past experience in developing the potential improvement list. Kimley-Horn evaluated the list of potential improvements based on their applicability to the unique environment and constraints in the project area and identified the improvements that would be most appropriate and consistent with project goals; these improvements were then compiled into five corridor improvement concept alternatives. These alternatives are briefly summarized below and are discussed in further detail later in this report.

- **Alternative 1** – Minor improvements to the roadway such as installation of lighting and RRFBs, striping improvements, and traffic calming measures.
- **Alternative 2** – More significant bicycle/pedestrian/traffic calming improvements combined with the installation of traffic signals at Alpine Road/La Cuesta Drive and the two I-280 ramp intersections with Alpine Road
- **Alternative 3** – More significant bicycle/pedestrian/traffic calming improvements combined with the installation of roundabouts at Alpine Road/La Cuesta Drive and the two I-280 ramp intersections with Alpine Road.
- **Alternative 4** – Alternative 2 improvements plus additional major circulation improvements and the installation of a traffic signal at Alpine Road/La Mesa Drive
- **Alternative 5** – Alternative 3 improvements plus additional major circulation improvements and the installation of a roundabout at Alpine Road/La Mesa Drive

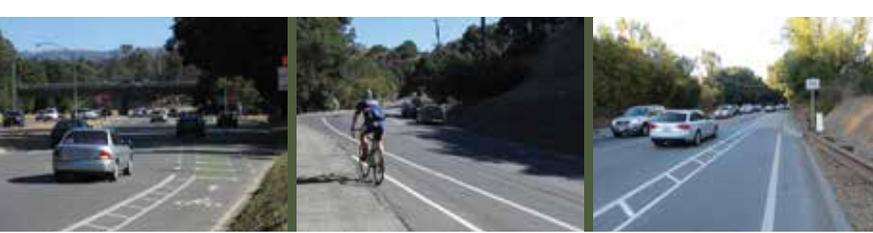
Kimley-Horn produced graphic layouts of each of the corridor alternatives to help obtain stakeholder and community input on the characteristics of the alternatives. The five alternatives were evaluated on a corridor-wide basis to understand the effectiveness of a set of solutions at achieving the project goals.

After gaining input on the five corridor improvement concept alternatives, Kimley-Horn refined the alternatives down to one preferred alternative which incorporated elements from the initial alternatives that were most preferred by stakeholders and the community. This alternative was split into two phases: Phase 1 consisted of short-term improvements while Phase 2 included long-term improvements.

### 2.5. Evaluation of Improvements

Traffic analysis of the alternatives was performed using the VISSIM micro-simulation platform, which allows for modeling of individual vehicle movements as they travel through the roadway network. This micro-simulation model allows the operations of the entire study area network to be considered in an integrated fashion, providing for the detailed evaluation of upstream and downstream effects of a set of solutions. A critical component of the analysis was understanding how treatments at the individual intersections interact and affect upstream and downstream locations.

VISSIM is a sophisticated and detailed analysis tool that provides the ability to model complex multimodal traffic interactions, including merge, weave, pedestrian, and bicycle movements. Existing auto, transit, bicycle, and pedestrian activity data was utilized in the micro-simulation model.



# Alpine Road

## CORRIDOR STUDY PROJECT

The VISSIM analysis calculated metrics such as intersection delay, queuing, corridor travel time, and vehicular emissions for the baseline scenario and each alternative. Videos created from the VISSIM model allowed for visual demonstration of conditions with the baseline scenario and each improvement alternative. These videos—utilized in the second community meeting—enhanced community understanding of the alternatives and feedback.

Intersection operations are described using a level of service grade, as defined by the 2010 Highway Capacity Manual (HCM). The level of service ranges from A to F, with A representing little to no delay and F representing failing conditions with excessive delay.

Intersection delay was obtained from the VISSIM model in the form of seconds of delay. This was converted to a level of service using HCM thresholds for delay (shown in Table 2-1). It is noted that the VISSIM model does not rely on HCM methodologies and thus the level of service grade provided should be used as a comparative tool only and may not match the findings of an HCM-based analysis.

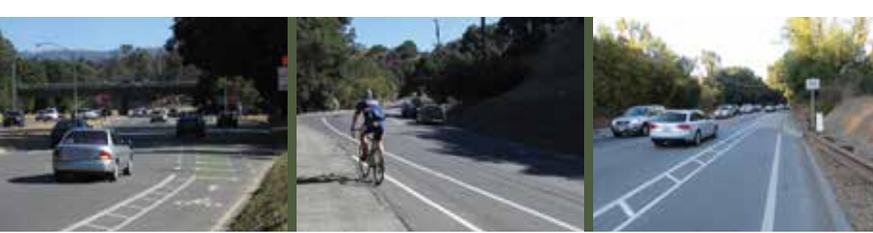
**Table 2-1: Intersection Level of Service Definitions**

Level of Service	Description	Signalized (Avg. control delay per vehicle, sec/veh.)	Unsignalized (Avg. control delay per vehicle, sec/veh.)
A	Free flow with no delays. Users are virtually unaffected by others in the traffic stream	< 10	< 10
B	Stable traffic. Traffic flows smoothly with few delays.	10 – 20	10 – 15
C	Stable flow but the operation of individual users becomes affected by other vehicles. Modest delays.	20 – 35	15 – 25
D	Approaching unstable flow. Operation of individual users becomes significantly affected by other vehicles. Delays may be more than one cycle during peak hours.	35 – 55	25 – 35
E	Unstable flow with operating conditions at or near the capacity level. Long delays and vehicle queuing.	55 – 80	35 – 50
F	Forced or breakdown flow that causes reduced capacity. Stop and go traffic conditions. Excessive long delays and vehicle queuing.	> 80	> 50

*Sources: Transportation Research Board, Highway Capacity Manual 2010, National Research Council, 2010*

For the analysis of alternatives which included roundabouts, roundabout intersections were also modeled using the SIDRA Intersection analysis software, in addition to VISSIM. SIDRA was used to verify VISSIM results in these scenarios because it is the standard accepted software for roundabout analysis.

In addition to analyzing solutions based on traffic impacts, the project team evaluated alternatives' impacts on bicycle and pedestrian circulation and safety.



# Alpine Road

## CORRIDOR STUDY PROJECT

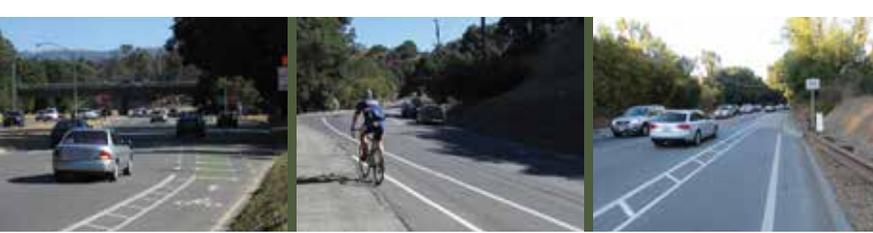
### **2.6. Public Outreach and Stakeholder Involvement**

Community and stakeholder input was a guiding element of this study. Three community meetings were held throughout the study. One was held in the early stages of the study to discuss the priorities of the community and needs of the corridor. The second community meeting was held in the middle stage of the study to review the five corridor improvement concept alternatives and obtain input on which concepts were deemed most desirable by the community. The final community meeting was held in the latter stages of the study to review the preferred concept alternative and obtain feedback from the community on which individual improvements included in the preferred alternative should receive the greatest priority.

In addition to the three community meetings held, public input was sought in various other formats. Community members submitted comments via e-mail before and after each meeting. An online survey was distributed following both the first and second public meetings and in advance of the third public meeting to allow community members to provide additional feedback on the study and recommendations. Between the second and third public meetings, County of San Mateo staff met with community members at the project site to walk the corridor and discuss potential improvements.

In addition to the direct interaction with the public at the three community meetings and the walk audit, the project team developed a website for the project (<http://publicworks.smcgov.org/alpine-road-traffic-corridor-study>). This website was used to post announcements for public meetings, provide the community with all materials shown at the meetings (including PowerPoint presentations, information boards and videos), and post project deliverables.

In addition to interactions with the public, the project team involved other stakeholder agencies and groups. The team held multiple meetings with Caltrans representatives to coordinate data collection, receive input on proposed improvements, and review analysis findings from the study. The team also received input on proposed improvements from Stanford University and staff from the City of Menlo Park and the Town of Portola Valley.



# Alpine Road

## CORRIDOR STUDY PROJECT

### 3. Baseline Conditions

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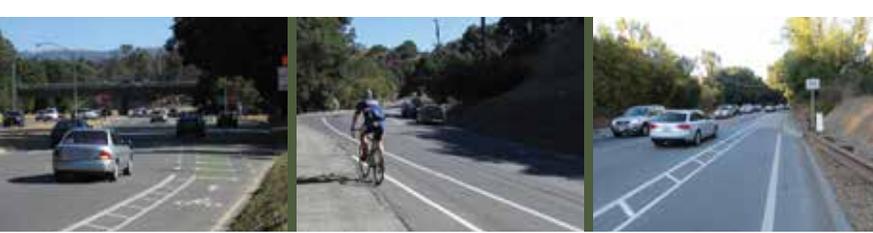
#### 3.1. Traffic Circulation

Within the study area, Alpine Road is a heavily utilized arterial. The road is generally one lane in each direction, but expands to two lanes in each direction in the vicinity of I-280. It has a signed speed limit of 40 miles per hour between the north end of the study corridor and I-280, 45 miles per hour from I-280 to between San Francisquito Creek Road and La Cuesta Drive, and 35 miles per hour from between San Francisquito Creek Road and La Cuesta Drive to the southern end of the study corridor. Warning signs indicate advisory speed limits of 25 or 30 miles per hour near side-streets and along sharp curves. The road provides a north-south connection between Portola Valley in the south and Stanford, Palo Alto, and Menlo Park in the north. The existing conditions intersection geometry and traffic control is shown in Figure 3-1.

Kimley-Horn analyzed the existing (2015), near-term (2020), and long-term (2040) baseline traffic conditions at the project study intersections (identified in Figure 3-1) using collected count data. In general, northbound traffic is greater in the AM peak hour, while southbound traffic was greater during the Mid-Day and PM peak hours, which is consistent with a pattern of commuters driving in from other locations via I-280, then using Alpine Road to access their place of employment in Palo Alto, Menlo Park, or at Stanford University.

#### Traffic Volumes

The regional travel demand model forecasts an overall increase in traffic volumes in the study area. Kimley-Horn used C/CAG's travel demand model to determine a yearly annual traffic growth rate and applied that yearly growth rate to existing volumes to determine future volumes. The model outputs provided by VTA were reviewed and refined to reflect reasonably expected roadway geometrics in the study area. In select locations where volumes were forecast to decrease, a background growth rate was applied based on the nearby land use growth in order to provide a more conservative analysis. Table 3-1 summarizes the growth in volumes along the corridor between 2015 and 2040. The existing, near-term and long-term turning movement volumes are shown in Figure 3-2, Figure 3-3, and Figure 3-4, respectively.



# Alpine Road

## CORRIDOR STUDY PROJECT

Table 3-1: Corridor Volume Growth, 2015-2040

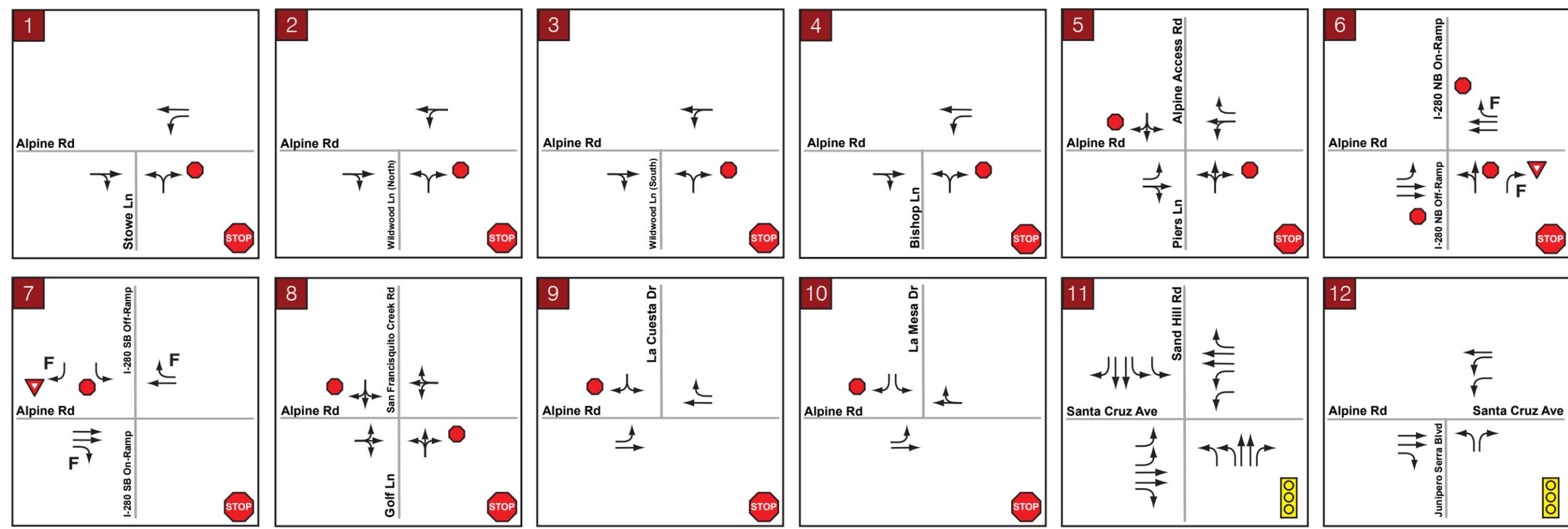
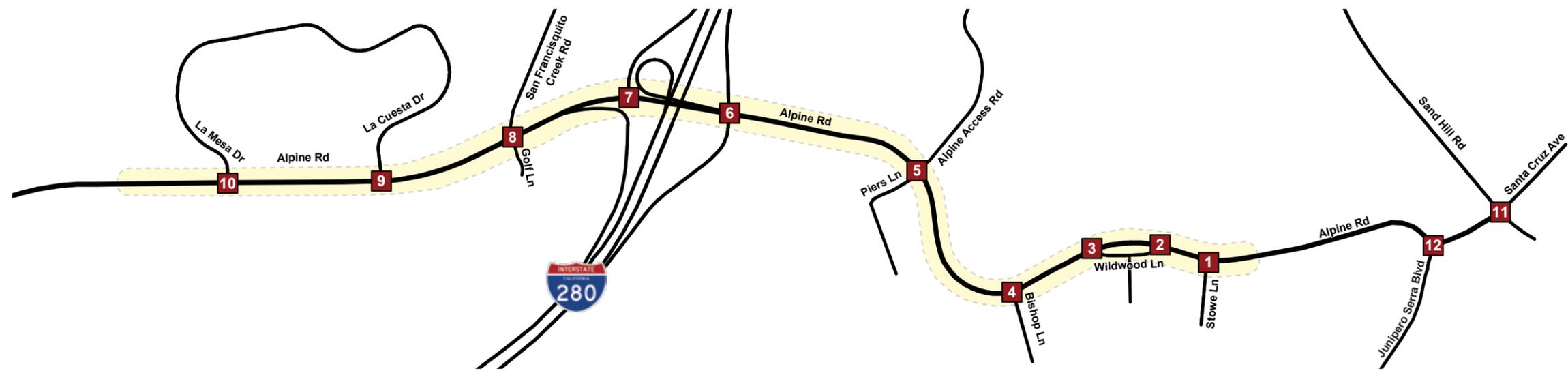
Alpine Road Segment		AM Peak Hour 7:30 AM - 8:30 AM	Midday Peak Hour 2:30 PM - 3:30 PM	PM Peak Hour 4:30 PM - 5:30 PM
<b>Existing (2015) Conditions Volumes</b>				
Between Stowe Ln and Junipero Serra Blvd	<b>NB</b>	1,442	705	788
	<b>SB</b>	659	1,055	1,197
Between I-280 and Alpine Access Rd	<b>NB</b>	1,516	704	762
	<b>SB</b>	657	1,122	1,298
Between San Francisquito Creek Rd and I-280	<b>NB</b>	770	749	711
	<b>SB</b>	951	693	789
<b>Long-Term (2040) Scenario Volumes</b>				
Between Stowe Ln and Junipero Serra Blvd	<b>NB</b>	1,676	873	918
	<b>SB</b>	737	1,306	1,489
Between I-280 and Alpine Access Rd	<b>NB</b>	1,750	872	892
	<b>SB</b>	713	1,370	1,587
Between San Francisquito Creek Rd and I-280	<b>NB</b>	834	830	745
	<b>SB</b>	1,097	817	914
<b>Percent Growth, 2015-2040</b>				
Between Stowe Ln and Junipero Serra Blvd	<b>NB</b>	16%	24%	16%
	<b>SB</b>	12%	24%	24%
Between I-280 and Alpine Access Rd	<b>NB</b>	15%	24%	17%
	<b>SB</b>	9%	22%	22%
Between San Francisquito Creek Rd and I-280	<b>NB</b>	8%	11%	5%
	<b>SB</b>	15%	18%	16%

### Speed

A speed survey was conducted in four locations along the study corridor in October 2015. The results of the survey are shown in Table 3-2. Historical speed data provided by the County of San Mateo shows that these results reflect a decrease in speeds on the corridor over the past few years. Previous surveys in the Piers Lane/Alpine Access Road area found 85th percentile speeds of 44 miles per hour, 44 miles per hour, and 43 miles per hour in 2008, 2010, and 2012, respectively, compared to the 41 miles per hour observed in 2015. A speed survey conducted near La Mesa Drive in 2011 observed an 85th percentile speed of 40 miles per hour, more than the 38 miles per hour measured in 2015.

# Alpine Road

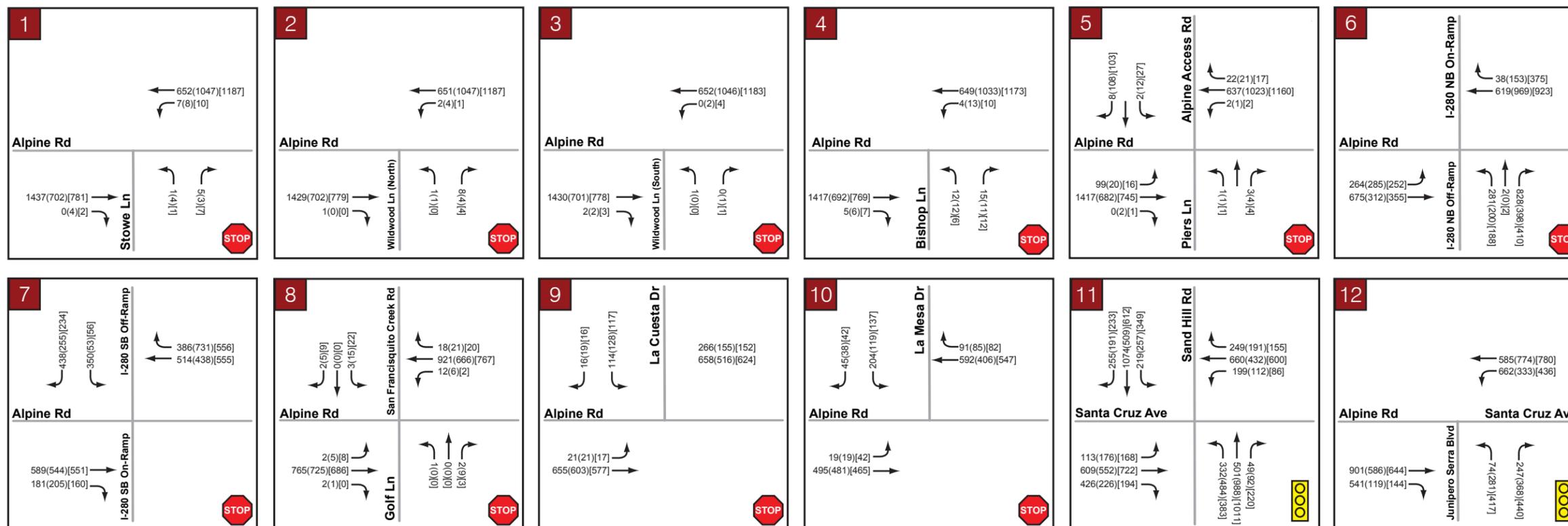
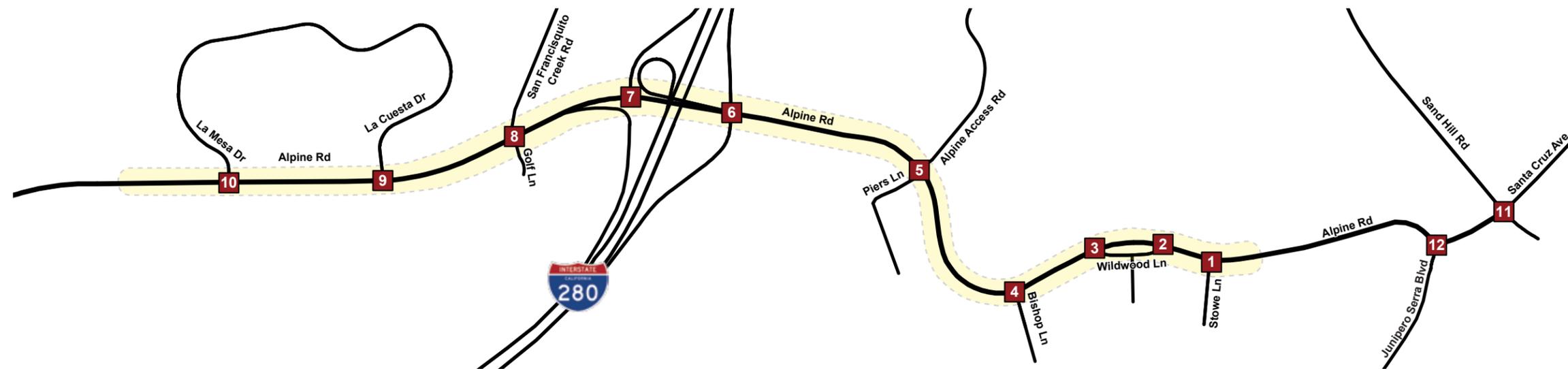
## CORRIDOR STUDY PROJECT



LEGEND	
#	Study Intersection
STOP	Stop Controlled
Yield Sign	Yield Sign
Signalized	Signalized
Yellow Box	Study Corridor
F	Free Right Turn

# Alpine Road

## CORRIDOR STUDY PROJECT

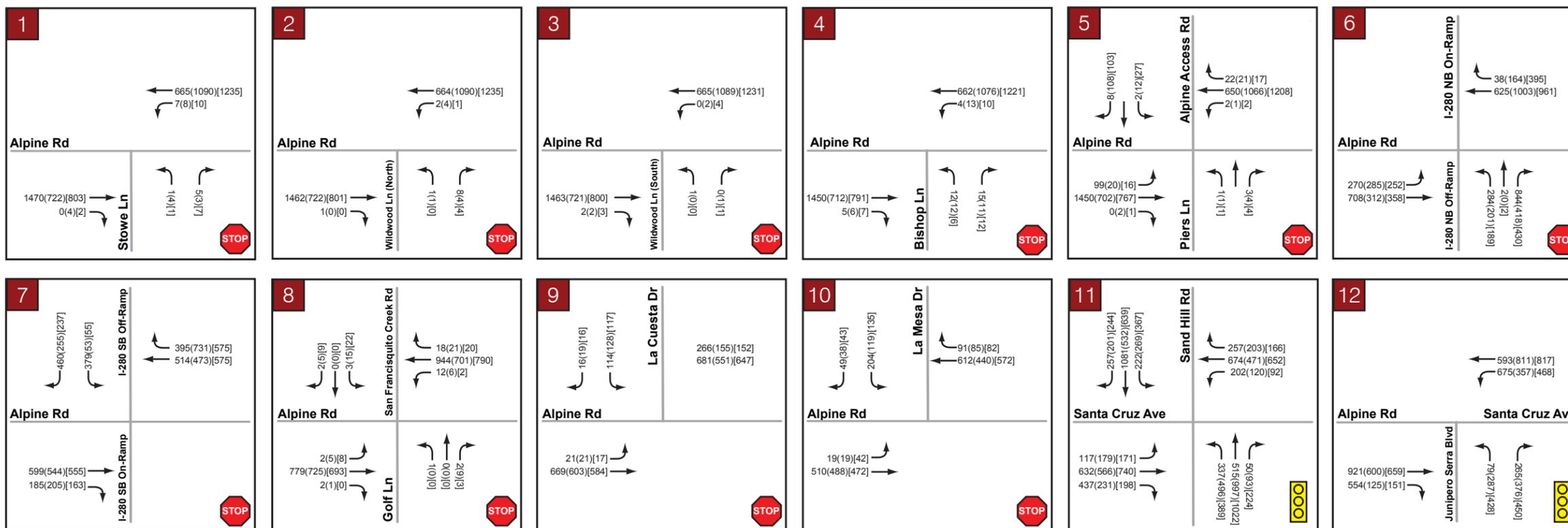
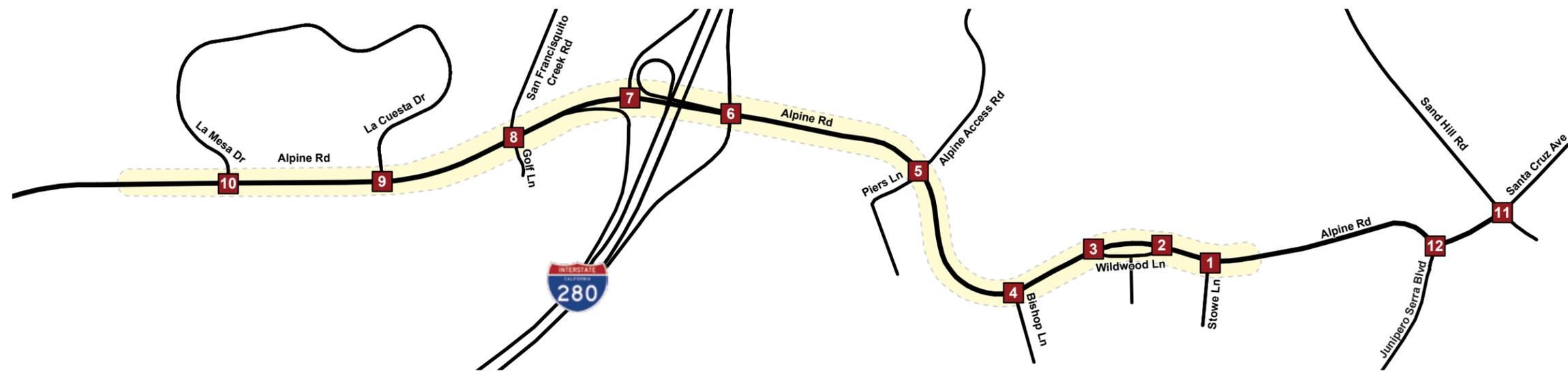


**LEGEND**

- # Study Intersection
- xx(yy)zz AM(Mid-Day)[PM] Volumes
- STOP Stop Controlled
- Signalized
- Study Corridor

# Alpine Road

## CORRIDOR STUDY PROJECT

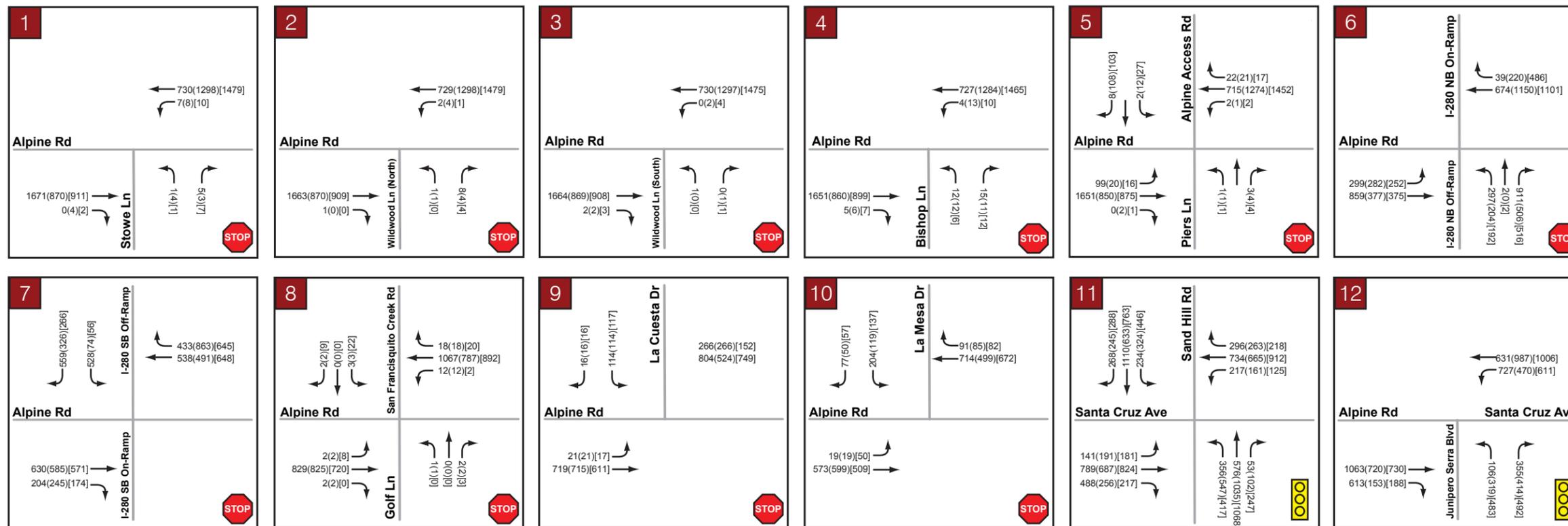
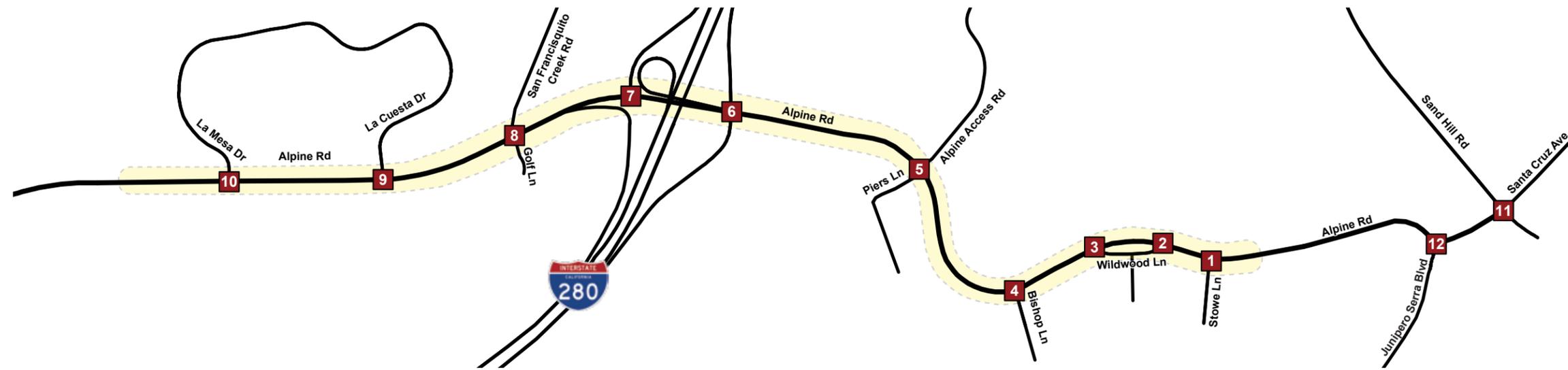


**LEGEND**

- # Study Intersection
- XX(YY)[ZZ] AM(Mid-Day)[PM] Volumes
- STOP Stop Controlled
- Signalized
- Study Corridor

# Alpine Road

## CORRIDOR STUDY PROJECT



**LEGEND**

- # Study Intersection
- xx(yy)zz AM(Mid-Day)[PM] Volumes
- STOP Stop Controlled
- Signalized
- Study Corridor

# Alpine Road

## CORRIDOR STUDY PROJECT

*Table 3-2: Speed Survey Summary*

Alpine Road Segment	Posted Speed Limit (mph)	85th Percentile Speed (mph)		
		Northbound	Southbound	Combined
Between Bishop Ln and Wildwood Ln (South)	40	41	43	42
Between I-280 and Alpine Access Road	40	42	40	41
Between San Francisquito Creek Rd and I-280	45	44	42	43
South of La Mesa Drive	35	38	38	38

Existing conditions intersection delay and level of service are provided in Table 3-3. Detailed intersection and corridor volumes are provided in Appendix A.

The analysis indicates that locations north of I-280 experience high intersection delays, especially in the Mid-Day and PM peak hours. Travel times along the project corridor are highest in the southbound direction during the Mid-Day and PM peaks, primarily caused by the queuing at the I-280 interchange. Queues are known to extend from the I-280 northbound ramps north to Stowe Lane, creating significant delay and increasing the difficulty of accessing the corridor.

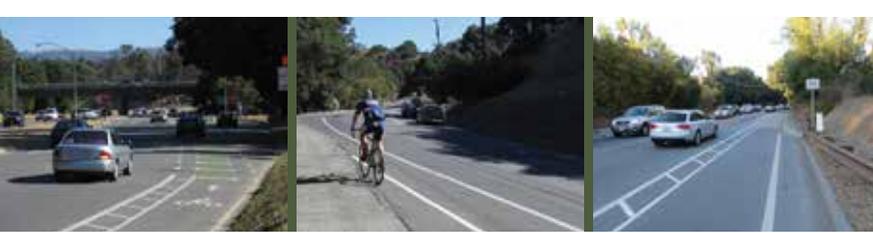
*Table 3-3: Existing Intersection Delay and Level of Service*

Intersection	Control	Existing (2015) Conditions					
		AM Peak (7:30-8:30 AM)		MD Peak (3-4 PM)		PM Peak (5-6 PM)	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Santa Cruz-Alpine / Junipero Serra	Signal	41.1	D	88.0	F	76.8	E
Stowe / Alpine	SSSC	5.4	A	31.7	D	21.5	C
Wildwood / Alpine	SSSC	31.0	D	32.8	D	>120	F
Bishop / Alpine	SSSC	16.2	C	41.3	E	23.3	C
Piers-Alpine Access / Alpine	SSSC	16.7	C	>120	F	>120	F
I-280 NB Ramps / Alpine	AWSC	15.6	C	52.2	F	38.7	E
I-280 SB Ramps / Alpine	SSSC	12.5	B	3.9	A	4.6	A
Golf-San Francisquito / Alpine	SSSC	15.6	C	13.7	B	14.9	B
La Cuesta / Alpine	SSSC	15.0	C	15.0	C	14.3	B
La Mesa / Alpine	SSSC	14.0	B	10.1	B	10.8	B

Notes:

(a) SSSC = Side-street Stop-Control; AWSC = All-Way Stop-Control; Signal = Signalized

(b) Delay represents worst minor street approach movement for SSSC intersections. Delay represents average intersection delay for signalized intersections.



# Alpine Road

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Table 3-4 and Table 3-5 show intersection delay and level of service results for the near-term and long-term scenarios, respectively.

*Table 3-4: Near-Term (2020) Baseline Intersection Delay and Level of Service*

Intersection	Near-Term (2020) No Improvements						
	Control	AM Peak (7:30-8:30 AM)		MD Peak (3-4 PM)		PM Peak (5-6 PM)	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Santa Cruz-Alpine / Junipero Serra	Signal	43.4	D	97.1	F	77.8	E
Stowe / Alpine	SSSC	5.3	A	38.1	E	21.6	C
Wildwood / Alpine	SSSC	36.6	E	34.5	D	>120	F
Bishop / Alpine	SSSC	17.1	C	42.8	E	23.2	C
Piers-Alpine Access / Alpine	SSSC	25.9	D	>120	F	>120	F
I-280 NB Ramps / Alpine	AWSC	17.2	C	52.3	F	38.9	E
I-280 SB Ramps / Alpine	SSSC	15.6	C	3.8	A	4.7	A
Golf-San Francisquito / Alpine	SSSC	23.7	C	13.9	B	14.0	B
La Cuesta / Alpine	SSSC	16.3	C	13.8	B	14.6	B
La Mesa / Alpine	SSSC	13.6	B	10.1	B	10.8	B

Notes:

(a) SSSC = Side-street Stop-Control; AWSC = All-Way Stop-Control; Signal = Signalized

(b) Delay represents worst minor street approach movement for SSSC intersections. Delay represents average intersection delay for signalized intersections.

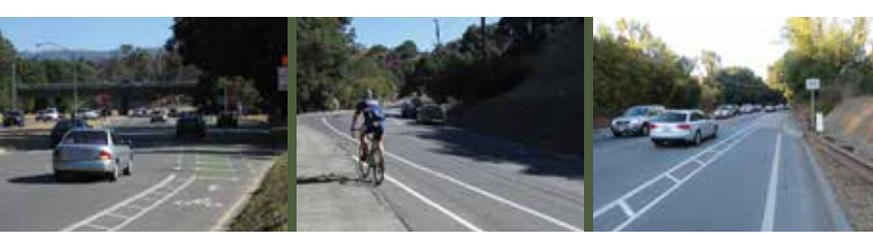
*Table 3-5: Long-Term (2040) Baseline Intersection Delay and Level of Service*

Intersection	Long-Term (2040) No Improvements						
	Control	AM Peak (7:30-8:30 AM)		MD Peak (3-4 PM)		PM Peak (5-6 PM)	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Santa Cruz-Alpine / Junipero Serra	Signal	60.2	E	>120	F	81.4	F
Stowe / Alpine	SSSC	9.9	A	41.0	E	22.2	C
Wildwood / Alpine	SSSC	>120	F	39.7	E	>120	F
Bishop / Alpine	SSSC	>120	F	44.1	E	23.9	C
Piers-Alpine Access / Alpine	SSSC	42.4	E	>120	F	>120	F
I-280 NB Ramps / Alpine	AWSC	29.0	D	50.4	F	38.1	E
I-280 SB Ramps / Alpine	SSSC	51.2	F	4.0	A	5.0	A
Golf-San Francisquito / Alpine	SSSC	30.2	D	15.8	C	17.6	C
La Cuesta / Alpine	SSSC	19.2	C	14.4	B	16.8	C
La Mesa / Alpine	SSSC	14.8	B	10.4	B	11.0	B

Notes:

(a) SSSC = Side-street Stop-Control; AWSC = All-Way Stop-Control; Signal = Signalized

(b) Delay represents worst minor street approach movement for SSSC intersections. Delay represents average intersection delay for signalized intersections.



# Alpine Road CORRIDOR STUDY PROJECT

As shown in the above tables, the near-term and long-term baseline scenarios show a deterioration in traffic conditions in all locations, with a particularly sharp decline in conditions shown in the AM peak hour. Similar to existing conditions, the intersections that performed the worst are those north of I-280.

The largest expected impact on travel times is anticipated in the northbound direction in the long-term scenario, where the travel time is expected to increase from 3.9 minutes in existing conditions to 7.0 minutes in 2040. This increase in delay is associated with congestion at the signals at Alpine Road/Sand Hill Road and Alpine Road/Junipero Serra Boulevard. The City of Menlo Park is currently implementing a project to upgrade signal operations at those intersections. These upgrades are not assumed in this analysis as specific timing parameters were not available at the time of the analysis. Travel time results for the existing, near-term, and long-term scenarios are shown in Table 3-6.

*Table 3-6: Existing, Near-Term (2020), and Long-Term (2040) Corridor Travel Times*

Direction	From	To	AM Peak (7:30-8:30 AM)	Midday Peak (3-4 PM)	PM Peak (5-6 PM)
<b>Existing (2015) Conditions</b>					
Northbound	Portola Valley	Menlo Park	3.9 min	3.4 min	3.4 min
Southbound	Menlo Park	Portola Valley	3.9	12.8	9.5
<b>Near-Term (2020) No Improvements</b>					
Northbound	Portola Valley	Menlo Park	4.1	3.4	3.4
Southbound	Menlo Park	Portola Valley	4.0	13.1	9.6
<b>Long-Term (2040) No Improvements</b>					
Northbound	Portola Valley	Menlo Park	7.0	3.5	3.5
Southbound	Menlo Park	Portola Valley	4.1	14.0	9.7

**Notes:**

*Travel times represent the average travel time per vehicle driving between La Mesa Drive and Stowe Lane, inclusive, in the indicated peak hour.*

### 3.2. Bicycle/Pedestrian Facilities

A map of existing multimodal facilities is shown in Figure 3-6. Alpine Road includes Class II bicycle lanes on both sides of the corridor. In the I-280 interchange area, the bike lanes are protected by a striped buffer and include green paint. Approximately 400 feet north of Stowe Lane, an off-street bicycle and pedestrian path terminates at Alpine Road. To the north, this off-street path crosses underneath Junipero Serra Blvd and leads to the Santa Cruz Avenue/Sand Hill Road intersection, where it connects to sidewalks and other off-street bicycle/pedestrian facilities. Alpine Road was moderately utilized during weekday peak hours by cyclists with an average of 20-25 cyclists per hour traveling in either direction during weekday peak hours. Alpine Road is also heavily utilized as a recreational





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bicycle route, where “pelotons,” or groups of cyclists riding together, utilize the corridor as part of their route. Many of these pelotons typically ride during off-peak hours on weekdays or on weekends. Figure 3-5 shows existing bicycle and pedestrian turning movement volumes for weekday peak hours. Table 3-7 shows weekend bicycle volumes for the project corridor.

*Table 3-7: Weekend Bicycle Volumes – Alpine Road Between I-280 and San Francisquito Creek Road*

Time	Saturday		Sunday	
	Southbound	Northbound	Southbound	Northbound
<b>8 AM - 9 AM</b>	58	35	17	31
<b>9 AM - 10 AM</b>	69	24	71	33
<b>10 AM - 11 AM</b>	72	104	75	86
<b>11 AM - 12 PM</b>	52	72	66	91
<b>12 PM - 1 PM</b>	44	45	26	68
<b>1 PM - 2 PM</b>	37	22	19	43
<b>2 PM - 3 PM</b>	31	50	23	62
<b>3 PM - 4 PM</b>	33	43	16	25
<b>4 PM - 5 PM</b>	24	40	21	29
<b>5 PM - 6 PM</b>	18	21	9	19

The primary pedestrian facility along the study corridor is the Alpine Road Trail, which roughly parallels the east side of Alpine Road and is a multi-use trail which varies in width throughout the corridor. In the Ladera area of the study corridor, the Alpine Road Trail is an asphalt pedestrian path. North of La Cuesta Drive, this path transitions to a narrow, paved path which provides little to no separation from the roadway. In some locations, this path is more akin to a wide shoulder than a pedestrian path, and there is no curb or striping to distinguish between space for pedestrians and vehicles. Pedestrians cross the I-280 on- and off-ramps at-grade on striped crosswalks, except for the I-280 southbound on-ramp, where a pedestrian undercrossing is provided.

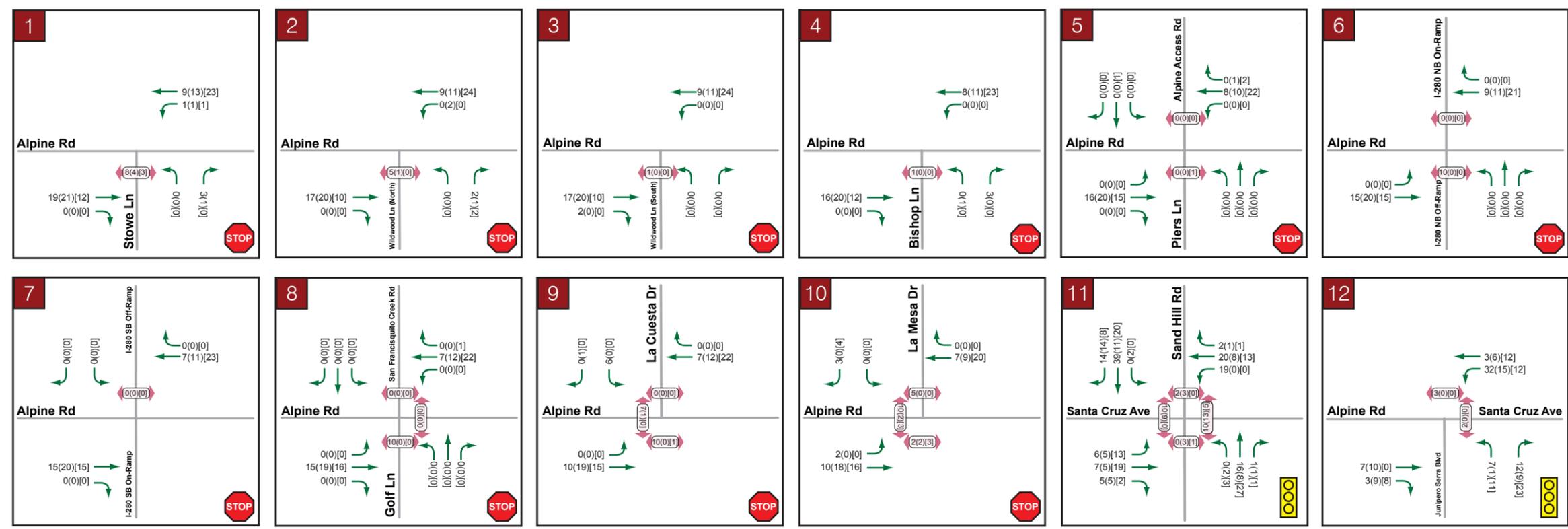
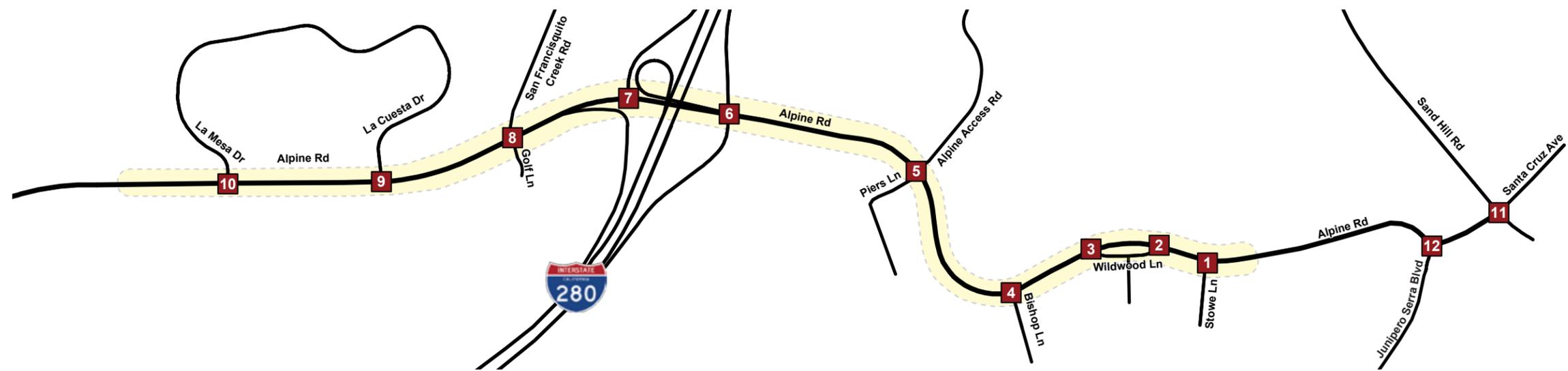
Currently, at the Alpine Road/Alpine Access Road/Piers Lane intersection, there is an open dirt area on the east side of Alpine Road which is used as informal parking for users of the Stanford Dish Trail. Some neighborhood residents expressed concerns that the movement of vehicles in and out of this parking area, which is not regulated with any kind of traffic control, endangers vehicles, bicycles, and pedestrians along the corridor.

### 3.3. Collision History

Table 3-8 summarizes the collision history of the study corridor for a recent five-year period (2011-2015). A total of 72 collisions were documented over this period, with over half (34) occurring at the Alpine Road/I-280 interchange. It is noted that residents have observed additional incidents during this period that were not reported or logged in the SWITRS database. Three of the reported collisions resulted in a severe injury. Eleven collisions involved a bicycle while no documented incidents involved a pedestrian. The most common type of collision was broadside collisions (38) followed by rear-end collisions (13). Broadside collisions most commonly occur at intersections when a driver makes a left- or right-turn in front of an oncoming car, or a driver runs a red light or stop sign. This may be caused by vehicles making an improper turn in front of another car due to an insufficient gap. Rear-end collisions most commonly occur at approaches to intersections when a vehicle decelerates and the vehicle behind it does not decelerate quickly enough to avoid a collision. This may be caused by heavy queuing or unexpected deceleration. The study corridor’s collision history is visualized in Figure 3-7.

# Alpine Road

## CORRIDOR STUDY PROJECT

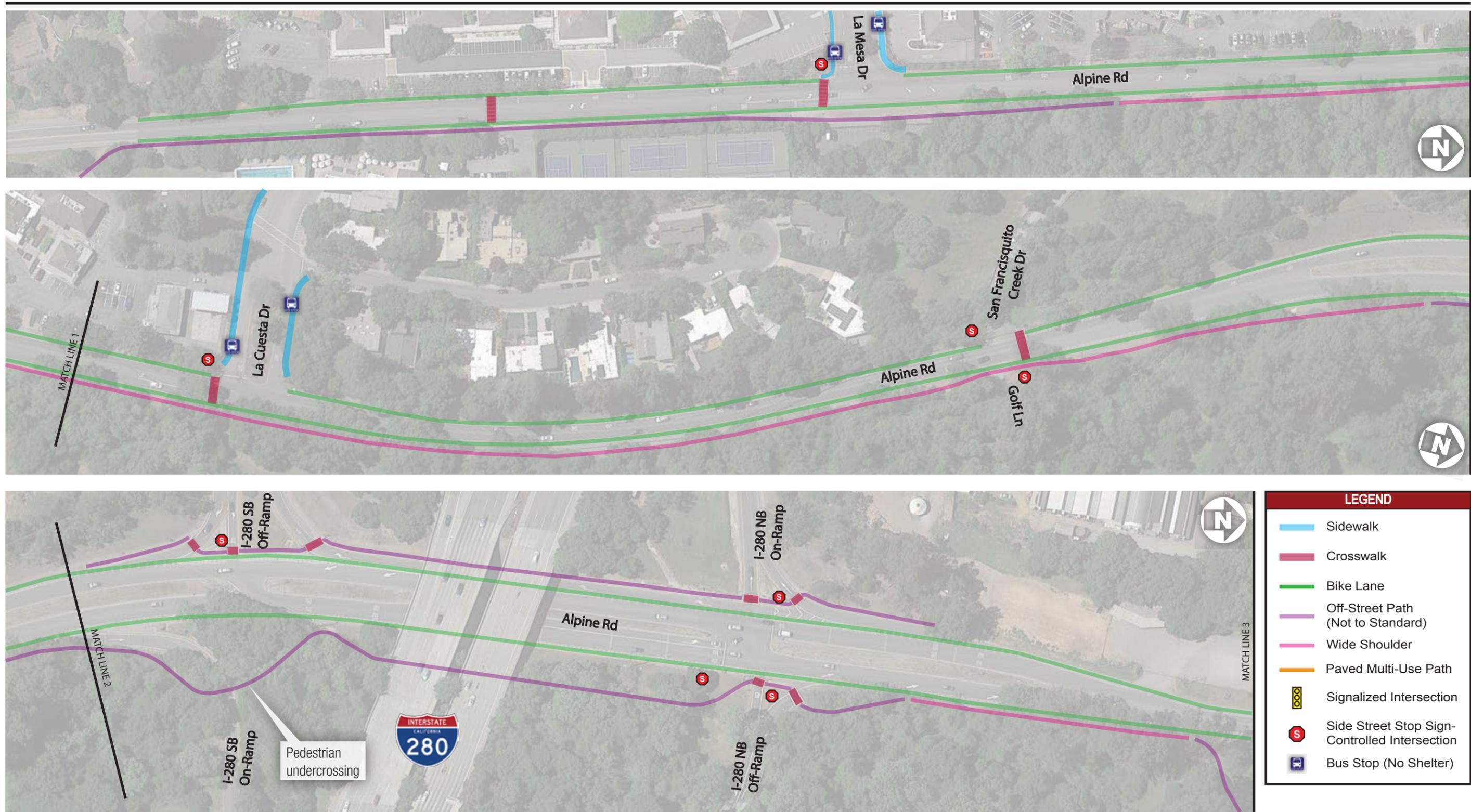


**LEGEND**

- # Study Intersection
- xx(yy)zz AM(Mid-Day)[PM] Volumes
- Pedestrian Crossing Volumes
- Bike Volumes at Intersections
- Stop Controlled
- Signalized
- Project Area

# Alpine Road

## CORRIDOR STUDY PROJECT



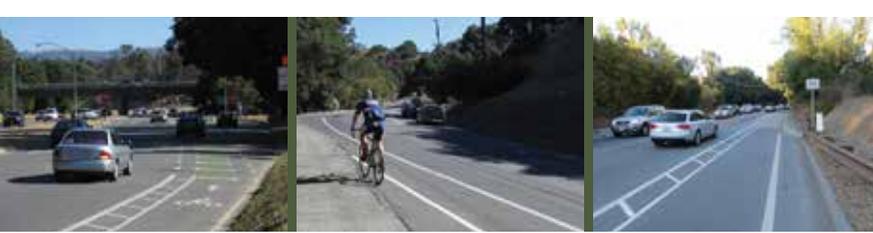
LEGEND	
	Sidewalk
	Crosswalk
	Bike Lane
	Off-Street Path (Not to Standard)
	Wide Shoulder
	Paved Multi-Use Path
	Signalized Intersection
	Side Street Stop Sign-Controlled Intersection
	Bus Stop (No Shelter)

# Alpine Road

## CORRIDOR STUDY PROJECT



LEGEND			
	Sidewalk		Wide Shoulder
	Crosswalk		Paved Multi-Use Path
	Bike Lane		Side Street Stop Sign-Controlled Intersection
	Off-Street Path (Not to Standard)		Signalized Intersection
			Bus Stop (No Shelter)



# Alpine Road

## CORRIDOR STUDY PROJECT

Table 3-8: Corridor Collision History (2011-2015)

Location <sup>(1)</sup>	Number of Accidents by Type (2011-2015)									Total	Severe Injuries	Fatalities
	Head-On	Sideswipe	Rear End	Broadside	Hit Object	Over-turned	Pedestrian	Bicycle	Other			
1500' s/o Junipero Serra Bl to Stowe Ln	0	0	0	0	1	0	0	1	0	2	0	0
Alpine Rd/Stowe Ln	0	0	0	0	0	0	0	1	0	1	0	0
Stowe Ln to Wildwood Ln	0	0	0	0	0	0	0	0	0	0	0	0
Alpine Rd/Wildwood Ln	0	1	3	1	0	0	0	0	0	5	0	0
Wildwood Ln to Bishop Ln	0	0	0	0	0	0	0	0	0	0	0	0
Alpine Rd/Bishop Ln	0	0	1	0	1	0	0	0	0	2	0	0
Bishop Ln to Piers Ln	0	0	1	0	2	0	0	0	0	3	0	0
Alpine Rd/Piers Ln/Alpine Access Road	0	0	1	2	0	0	0	1	0	4	0	0
Piers Ln to I-280	0	0	2	1	0	0	0	2	0	5	1	0
Alpine Rd/I-280	0	0	3	26	3	0	0	2	0	34	0	0
I-280 to San Francisquito Creek Rd	0	0	0	3	1	0	0	1	0	5	0	0
Alpine Rd/San Francisquito Creek Rd/Golf Ln	0	0	1	0	0	0	0	0	0	1	0	0
San Francisquito Creek Rd to La Cuesta Dr	0	0	0	0	0	0	0	1	0	1	1	0
Alpine Rd/La Cuesta Dr	0	0	0	4	0	0	0	2	0	6	1	0
La Cuesta Dr to La Mesa Dr	0	0	0	1	0	0	0	0	0	1	0	0
Alpine Rd/La Mesa Drive	0	0	1	0	0	0	0	0	0	1	0	0
La Mesa Dr to 1000' s/o La Mesa Dr	0	0	0	0	1	0	0	0	0	1	0	0
<b>Total</b>	<b>0</b>	<b>1</b>	<b>13</b>	<b>38</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>72</b>	<b>3</b>	<b>0</b>

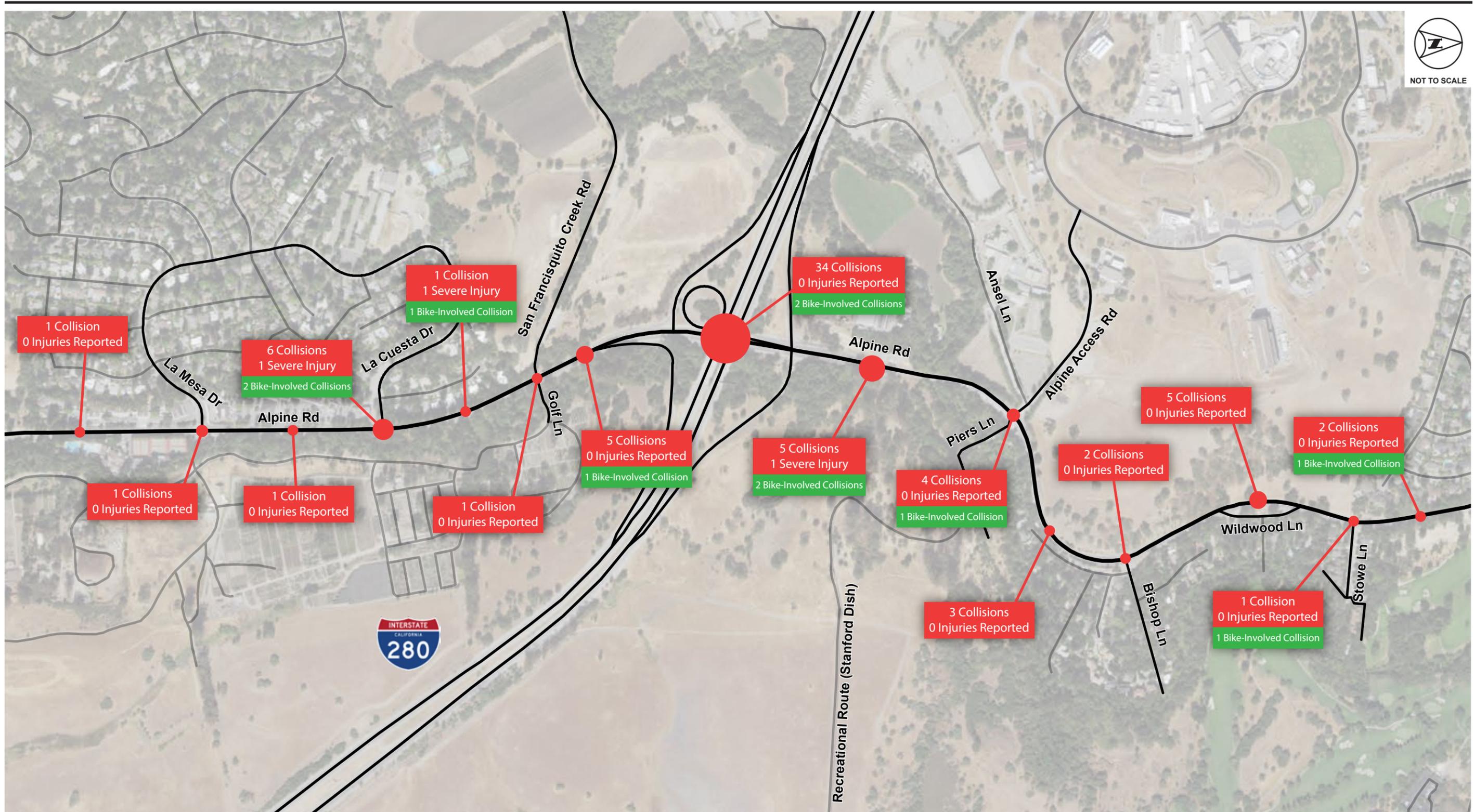
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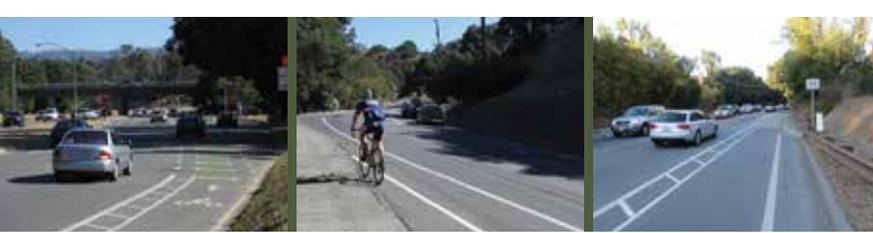
Source: Statewide Integrated Traffic Records System (SWITRS), 2011-2015

(1) Incidents assumed to be located at a particular intersection if they occurred within 200' of the intersection

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### 3.4. Transit Facilities and Service

SamTrans Routes 86 and 87 operate on the Alpine Road corridor and provide transit to local schools. Route 86 runs three buses in the morning headed toward Menlo Atherton High School and one outbound bus in the afternoon. Route 87 runs two buses in the morning headed toward Woodside High School and runs two outbound buses in the afternoon. Both routes run only on school days. Along Alpine Road, one bus stop is located on the northbound side of the road just north of Stowe Lane, and one is located on the southbound side of the road at Wildwood Lane. In September 2016, a total of 10 riders utilized the Stowe Lane bus stop, while no riders utilized the stop at Wildwood Lane. Additionally, at the Alpine Road/La Cuesta Drive and Alpine Road/La Mesa Drive intersections, a bus stop is located on both the westbound and eastbound sides of the side street (as shown in Figure 3-6).

### 3.5. Related Projects

#### Alpine Road Trail Improvements Project

The Alpine Road Trail Improvements Project is a rehabilitation of the Alpine Road Trail within unincorporated San Mateo County. The County of San Mateo is currently in the final design stage of this project, which will make improvements to the trail facilities located on the east side of Alpine Road. In some areas, this trail is a multi-use path separated from the roadway, while in others it is a narrow asphalt path adjacent to the shoulder. The objectives of the project are to rehabilitate this segment of the trail, stabilize the creek banks along the trail in three locations to prevent erosion, and to improve the trail surface for its users.

The project will repave the existing path on the east side of Alpine Road in the study area at its current width.

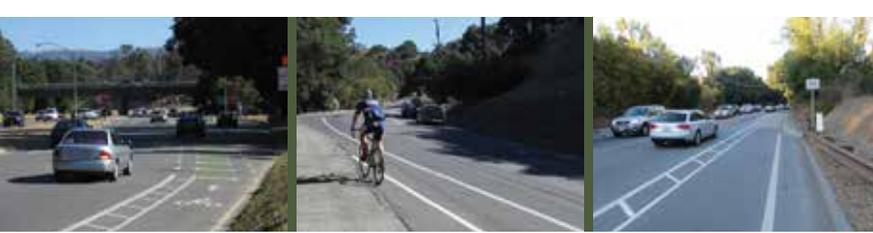
#### Page Mill Road Interchange

In 2015, Kimley-Horn completed a corridor study report for Page Mill Expressway which included recommended improvements for the Page Mill Road/I-280 interchange. Key components of the recommended interchange concept include:

- Installation of a roundabout to serve the intersection of I-280 southbound ramps, Page Mill Road, and Arastradero Road;
- Installation of a signal at the intersection of Page Mill Road and the I-280 northbound ramps;
- Shift of the eastbound Page Mill Road to I-280 northbound on-ramp to the new northbound ramp intersection;
- Creation of a frontage road between Christopher Lane and Old Page Mill Road, shifting access between Page Mill Road and Christopher Lane, the private driveway, and Gerth Lane to Old Page Mill Road, and installation of a signal at Page Mill Road/Old Page Mill Road;
- Provision of a dedicated westbound right-turn lane to the I-280 northbound on-ramp;
- Provision of a signalized pedestrian crossing at the I-280 northbound ramps intersection; and
- Provision of a shared use path on the north side of Page Mill Road between the park-and-ride west of I-280 and the frontage road connection to Old Page Mill Road. The shared use path would pass beneath the I-280 southbound on- and off-ramps.

These improvements have not yet been implemented.

# Alpine Road CORRIDOR STUDY PROJECT



## Sand Hill Signal Improvements

Improvements to various intersections on Sand Hill Road near the study corridor are currently being implemented. The objective of the project is to install an adaptive traffic signal interconnect system on Sand Hill Road to allow for signals to adjust their timings and cycle lengths based on traffic information collected by the signal systems. The project included the installation of interconnect system equipment on Sand Hill Road between Oak Avenue and the I-280 northbound off-ramp.

## 3.6. Key Challenges & Constraints

The major challenges along the study corridor are the significant levels of congestion in peak hours and high speeds in off-peak hours. Both factors make it difficult to turn onto the corridor from the side-streets with stop control. Both factors also deteriorate bicycle and pedestrian safety along the corridor. A lack of separation between bicycles and vehicles reduces bicycle comfort and safety. Existing pedestrian facilities are limited and do not support comfortable circulation along and across the corridor.



A major constraint in this study is the limited right-of-way available to make improvements to the corridor. Congestion, safety, and bicycle and pedestrian circulation are issues that can be solved with various types of improvements, but options are limited due to right-of-way constraints. Portions of the study corridor are located alongside creek banks and steep slopes, leaving little to no additional width to provide more roadway space or multimodal facilities.

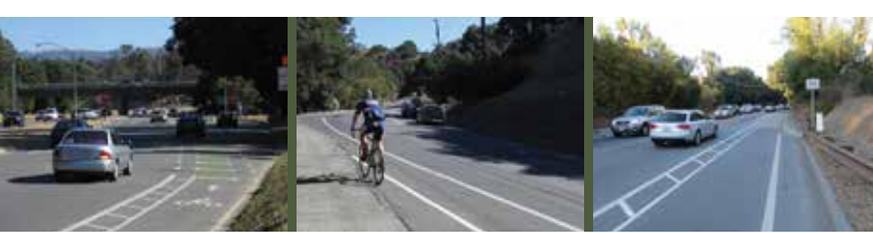
## 3.7. Public Meeting #1

The first community meeting was held on January 21st, 2016, from 7:00 to 8:30 PM at the Woodland School in Portola Valley. The purpose of the meeting was to inform the public about the project and elicit feedback from the meeting participants to help define the needs and priorities for the project corridor. Approximately 100 community members attended this meeting. Attendees identified themselves primarily as local residents.



The meeting began with a presentation by the project team which oriented the attendees to the purpose of the project, some previous community feedback, project objectives, proposed evaluation criteria and the existing conditions.

During and after the presentation, many questions, suggestions, and opinions were offered to the project team; this input was recorded and documented in a meeting summary report. Following the presentation by the project team, the meeting attendees were directed to four different interactive stations that had been set up. The stations consisted of the following:



# Alpine Road

## CORRIDOR STUDY PROJECT

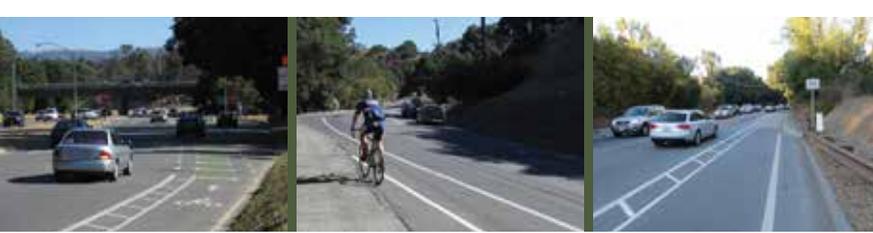
- How the individual used Alpine Road, in terms of mode, frequency, and time of day they use the corridor
- An aerial map of the study area on which attendees could mark their place of residence
- A voting board on which attendees were provided a list of potential improvement priorities and were asked to identify what they believed should be the first, second, and third highest priority improvement types for the corridor
- Large aerials of the study corridor on which attendees could provide input on constraints and needs for the corridor by writing on post-it notes and providing verbal feedback to a project team member

After attendees had a chance to visit individual stations, ask questions, and submit their comments, the group reconvened and the project team summarized the feedback received at each of the four stations. Comments from the meeting were transcribed and the feedback received to inform the next steps in the process.

In general, there was consensus on a few major priorities for the corridor. Attendees indicated their concern over the difficulty of turning onto Alpine Road from side streets caused by high traffic volumes and high speeds on the corridor. Community members also indicated a desire to reduce speeding, calm traffic, and improve bicycle and pedestrian safety with better facilities. Additional feedback received at the meeting included desires to eliminate “free” movements at the freeway interchange, improve access to Alpine Road Trail, facilitate emergency vehicle access on Alpine Road, and concerns about overflow parking at the Stanford Dish Trail entrance.



Attendees were asked to provide any additional feedback through an online follow-up survey or directly via e-mail; a total of 9 e-mails and 146 survey responses were received following the meeting. A meeting summary is included in Appendix B.



# Alpine Road

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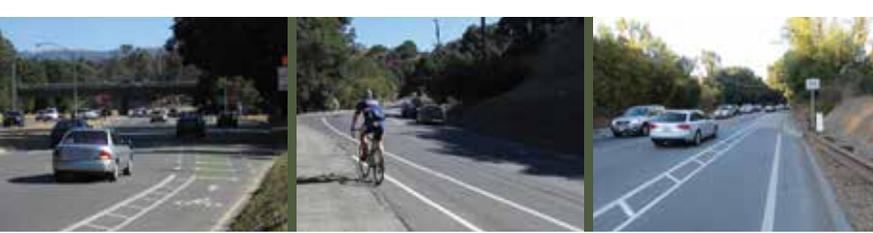
### 4. Improvement Alternatives

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The project team developed a set of five initial concept alternatives for the study corridor based on input received from the community and the needs identified for the corridor. Improvements that would result in major environmental impacts, significant tree loss, acquisition of private structures, or would substantially diminish the rural character of the roadway were not considered. Improvements were organized into three groups based on three geographic locations: the Ladera Area (the portion of the study corridor located south of I-280), the I-280 interchange (including the Alpine Road/Alpine Access Road/Piers Lane intersection), and the Stanford Weekend Acres Area (the portion of the study corridor north of Piers Lane). Listed below are some explanations of some of the more technical improvements that were included in the concept alternatives.

- **Engineering and Traffic Study** – The California Manual on Uniform Traffic Control Devices indicates that a road's speed limit should be established as the 85th percentile speed rounded to the nearest 5 miles per hour. The speed limit may be reduced by 5 miles per hour for safety reasons, but an Engineering and Traffic Study must be performed to justify it.
- **Rapid Rectangular Flashing Beacon (RRFB)** – RRFBs are flashing lights which accompany pedestrian crossings (pictured right). They can be activated by a push button or a pedestrian detection system. RRFBs can be used at crosswalks as an alternative to a traffic signal to provide enhanced pedestrian visibility and increase driver yielding.
- **Bike slot** – at intersection approaches, a bike slot is the provision of a bike lane on the left side of a right-turn pocket. This allows bicyclists to make through movements through an intersection without fear of right-turning vehicles crossing in front of them and causing a collision (also known as “right-hook movements”).
- **Green striping in conflict areas** – providing dashed green striping in locations where bicycle and vehicle traffic conflict increases the visibility of bicyclists to drivers and raises driver and bicyclist awareness of the conflict area.
- **Speed feedback signs** – electronic signs which detect the speed of oncoming vehicles and display that speed on an electronic display. These signs are known to provide a localized traffic calming effect.
- **Two-way Left-turn Lane** – a lane provided in the median of a roadway which provides vehicles a refuge to pull out of through traffic and make a left-turn without obstructing traffic in either direction.

The improvements for each alternatives and geographic area are detailed in the following sections.



# Alpine Road

## CORRIDOR STUDY PROJECT

### 4.1. Ladera Area Improvements

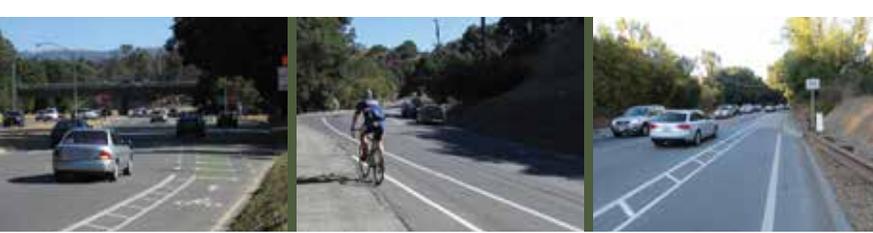
#### Alternative 1

The Ladera area improvements for Alternative 1 are listed below in Table 4-1. The preliminary designs for this alternative are provided in Appendix C.

*Table 4-1: Ladera Area Improvements – Alternative 1*

Location	Improvement	Benefit
Entire corridor	Complete an Engineering and Traffic Study to implement and sign a consistent speed limit of 35 miles per hour	Reduced vehicular speeds
Near Alpine Road/La Mesa Drive and between La Cuesta Drive and San Francisquito Road	Install speed feedback signs in both northbound and southbound directions	Reduced vehicular speeds
South of La Mesa Drive	Shift existing crosswalk 500 feet south of La Mesa Drive to line up with the Ladera Professional Center driveway	Improved pedestrian safety
South of La Mesa Drive; Alpine Road/La Mesa Drive; Alpine Road/La Cuesta Drive	Install RRFBs at crosswalks	Improved pedestrian safety
Alpine Road/La Mesa Drive; Alpine Road/La Cuesta Drive; Alpine Road/San Francisquito Creek Road	Install pedestrian-level lighting at crosswalks	Improved pedestrian safety
Alpine Road/La Cuesta Drive	Provide a 4-foot wide bike slot adjacent to the southbound right-turn lane at Alpine Road/La Cuesta Drive	Improved bicycle safety
Entire corridor	Provide dashed green striping in bike lanes within conflict areas	Improved bicycle safety
350 feet south of La Cuesta Drive	Close the right-out only Ladera Country Shopper driveway (a)	Improved bicycle safety
Alpine Road/La Cuesta Drive	Restrict the gas station driveway to fuel delivery trucks only (a)	Improved vehicular safety
Alpine Road/La Cuesta Drive	Install a median on the southbound approach of the intersection	Improved vehicular safety
Alpine Road/La Cuesta Drive	Widen the eastbound approach of the intersection to provide dedicated left-turn and right-turn lanes.	Improved vehicular safety
East side of Alpine Road	Widen the pedestrian path to a consistent 8-foot width except where it is limited by Los Trancos Creek	Improved pedestrian and bicycle circulation

Note: (a) Private property improvements



# Alpine Road

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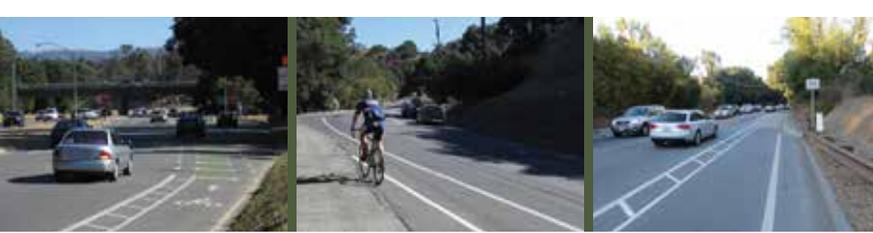
### Alternative 2

The Ladera area improvements for Alternative 2 are listed below in Table 4-2. The preliminary designs for this alternative are provided in Appendix C.

*Table 4-2: Ladera Area Improvements – Alternative 2*

Location	Improvement	Benefit
Entire corridor	Complete an Engineering and Traffic Study to implement and sign a consistent speed limit of 35 miles per hour	Reduced vehicular speeds
Near Alpine Road/La Mesa Drive and between La Cuesta Drive and San Francisquito Road	Install speed feedback signs in both northbound and southbound directions	Reduced vehicular speeds
South of La Mesa Drive	Shift existing crosswalk south of La Mesa Drive to line up with the Ladera Professional Center driveway	Improved pedestrian safety
South of La Mesa Drive; Alpine Road/La Mesa Drive	Install RRFBs at crosswalks	Improved pedestrian safety
Alpine Road/La Mesa Drive	Install pedestrian-level lighting at crosswalks	Improved pedestrian safety
Alpine Road/La Cuesta Drive	Provide a 5-foot wide bike slot adjacent to the southbound right-turn lane at Alpine Road/La Cuesta Drive	Improved bicycle safety
Entire corridor	Provide dashed green striping in bike lanes within conflict areas	Improved bicycle safety
350 feet south of La Cuesta Drive	Close the right-out only Ladera Country Shopper driveway (a)	Improved bicycle safety
Alpine Road/La Cuesta Drive	Restrict the gas station driveway to fuel delivery trucks only (a)	Improved vehicular safety
Alpine Road/La Cuesta Drive	Install a traffic signal	Facilitate side-street access and improved vehicular safety
Alpine Road/La Cuesta Drive	Install a median on the southbound approach of the intersection	Improved vehicular safety
Alpine Road/La Cuesta Drive	Widen the eastbound approach of the intersection to provide dedicated left-turn and right-turn lanes.	Improved vehicular safety
Alpine Road/La Cuesta Drive	Lengthen the southbound right-turn pocket by 50 feet	Reduced congestion
Alpine Road/San Francisquito Creek Road	Remove the existing crosswalk	Improved pedestrian safety
La Cuesta Drive to I-280	Provide a striped buffer to separate bike lanes from auto lanes on both sides of the roadway	Improved bicycle safety
East side of Alpine Road	Widen the pedestrian path to a consistent 8-foot width except where it is limited by Los Trancos Creek	Improved pedestrian and bicycle circulation

Note: (a) Private property improvements



# Alpine Road

## CORRIDOR STUDY PROJECT

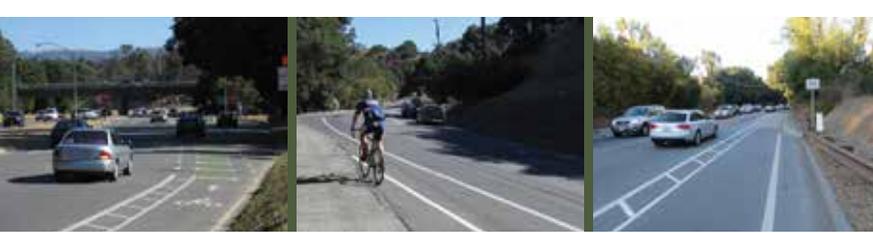
### Alternative 3

The Ladera area improvements for Alternative 3 are listed below in Table 4-3. The preliminary designs for this alternative are provided in Appendix C.

*Table 4-3: Ladera Area Improvements – Alternative 3*

Location	Improvement	Benefit
Entire corridor	Complete an Engineering and Traffic Study to implement and sign a consistent speed limit of 35 miles per hour	Reduced vehicular speeds
Near Alpine Road/La Mesa Drive and between La Cuesta Drive and San Francisquito Road	Install speed feedback signs in both northbound and southbound directions	Reduced vehicular speeds
South of La Mesa Drive	Shift existing crosswalk south of La Mesa Drive to line up with the Ladera Professional Center driveway	Improved pedestrian safety
South of La Mesa Drive; Alpine Road/La Mesa Drive;	Install RRFBs at crosswalks	Improved pedestrian safety
South of La Mesa Drive; Alpine Road/La Mesa Drive	Install pedestrian-level lighting at crosswalks	Improved pedestrian safety
Alpine Road/La Cuesta Drive	Install a single-lane roundabout	Facilitate side-street access and reduced congestion
Alpine Road/La Cuesta Drive	Install ramping to provide access to a 10-foot wide pedestrian/bicycle mixed-use path	Improved bicycle circulation
Entire corridor	Provide dashed green striping in bike lanes within conflict areas	Improved bicycle safety
350 feet south of La Cuesta Drive	Close the right-out only Ladera Country Shopper driveway (a)	Improved bicycle safety
Alpine Road/La Cuesta Drive	Restrict the gas station driveway to fuel delivery trucks only (a)	Improved vehicular safety
Alpine Road/La Cuesta Drive	Install raised medians on the northbound and southbound approach of the intersection	Improved vehicular safety
Alpine Road/San Francisquito Creek Road	Remove the existing crosswalk	Improved pedestrian safety
La Cuesta Drive to I-280	Provide a striped buffer to separate bike lanes from auto lanes on both sides of the roadway	Improved bicycle safety
East side of Alpine Road	Widen the pedestrian path to a consistent 8-foot width except where it is limited by Los Trancos Creek	Improved pedestrian and bicycle circulation

Note: (a) Private property improvements



# Alpine Road

## CORRIDOR STUDY PROJECT

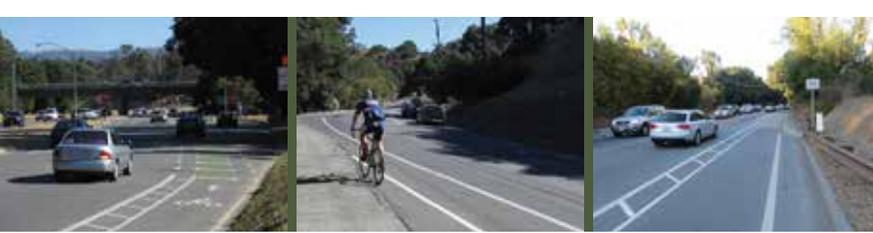
### Alternative 4

The Ladera area improvements for Alternative 4 are listed below in Table 4-4. The preliminary designs for this alternative are provided in Appendix C.

*Table 4-4: Ladera Area Improvements – Alternative 4*

Location	Improvement	Benefit
Entire corridor	Complete an Engineering and Traffic Study to implement and sign a consistent speed limit of 35 miles per hour	Reduced vehicular speeds
Near Alpine Road/La Mesa Drive and between La Cuesta Drive and San Francisquito Road	Install speed feedback signs in both northbound and southbound directions	Reduced vehicular speeds
Alpine Road/La Cuesta Drive	Provide a 5-foot wide bike slot adjacent to the southbound right-turn lane at Alpine Road/La Cuesta Drive	Improved bicycle safety
Entire corridor	Provide dashed green striping in bike lanes within conflict areas	Improved bicycle safety
350 feet south of La Cuesta Drive	Close the right-out only Ladera Country Shopper driveway (a)	Improved bicycle safety
Alpine Road/La Cuesta Drive	Restrict the gas station driveway to fuel delivery trucks only (a)	Improved vehicular safety
Alpine Road/La Cuesta Drive	Install a traffic signal	Facilitate side-street access and improved vehicular safety
Alpine Road/La Mesa Drive	Install a traffic signal	Facilitate side-street access and improved vehicular safety
Alpine Road/La Cuesta Drive; Alpine Road/La Mesa Drive	Install a median on the southbound approach of the intersection	Improved vehicular safety
Alpine Road/La Cuesta Drive	Widen the eastbound approach of the intersection to provide dedicated left-turn and right-turn lanes.	Facilitate side-street access
Alpine Road/La Cuesta Drive	Lengthen the southbound right-turn pocket by 50 feet	Reduced congestion
Alpine Road/San Francisquito Creek Road	Remove the existing crosswalk	Improved pedestrian safety
La Cuesta Drive to I-280	Provide a striped buffer to separate bike lanes from auto lanes on both sides of the roadway	Improved bicycle safety
East side of Alpine Road	Widen the pedestrian path to a consistent 8-foot width except where it is limited by Los Trancos Creek	Improved pedestrian and bicycle circulation

Note: (a) Private property improvements



# Alpine Road

## CORRIDOR STUDY PROJECT

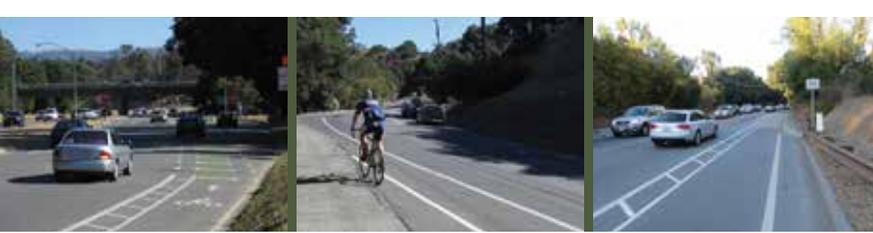
### Alternative 5

The Ladera area improvements for Alternative 5 are listed below in Table 4-5. The preliminary designs for this alternative are provided in Appendix C.

*Table 4-5: Ladera Area Improvements – Alternative 5*

Location	Improvement	Benefit
Entire corridor	Complete an Engineering and Traffic Study to implement and sign a consistent speed limit of 35 miles per hour	Reduced vehicular speeds
Near Alpine Road/La Mesa Drive and between La Cuesta Drive and San Francisquito Road	Install speed feedback signs in both northbound and southbound directions	Reduced vehicular speeds
South of La Mesa Drive	Shift existing crosswalk south of La Mesa Drive to line up with the Ladera Professional Center driveway	Improved pedestrian safety
South of La Mesa Drive	Install RRFBs at crosswalk	Improved pedestrian safety
Alpine Road/La Cuesta Drive	Install a single-lane roundabout	Facilitate side-street access and reduced congestion
Alpine Road/La Mesa Drive	Install a single-lane roundabout	Facilitate side-street access and reduced congestion
Alpine Road/La Cuesta Drive; Alpine Road/La Mesa Drive	Install ramping to provide access to a 10-foot wide pedestrian/bicycle mixed-use path	Improved bicycle circulation
Entire corridor	Provide dashed green striping in bike lanes within conflict areas	Improved bicycle safety
350 feet south of La Cuesta Drive	Close the right-out only Ladera Country Shopper driveway (a)	Improved bicycle safety
Alpine Road/La Cuesta Drive	Restrict the gas station driveway to fuel delivery trucks only (a)	Improved vehicular safety
Alpine Road/San Francisquito Creek Road	Remove the existing crosswalk	Improved pedestrian safety
La Cuesta Drive to I-280	Provide a striped buffer to separate bike lanes from auto lanes on both sides of the roadway	Improved bicycle safety
East side of Alpine Road	Widen the pedestrian path to a consistent 8-foot width except where it is limited by Los Trancos Creek	Improved pedestrian and bicycle circulation

Note: (a) Private property improvements



# Alpine Road

## CORRIDOR STUDY PROJECT

### 4.2. I-280 Area Improvements

#### Alternative 1

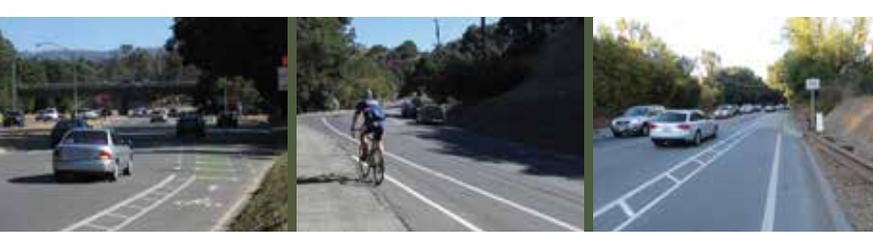
The I-280 area improvements for Alternative 1 are listed below in Table 4-6. The preliminary designs for this alternative are provided in Appendix C.

*Table 4-6: I-280 Area Improvements – Alternative 1*

Location	Improvement	Benefit
Entire corridor	Complete an Engineering and Traffic Study to implement and sign a consistent speed limit of 35 miles per hour	Reduced vehicular speeds
I-280 to Piers Lane	Extend the existing 3-foot wide bicycle lane buffer north past Piers Lane	Improved bicycle safety
East side of Alpine Road	Widen the trail to a consistent 8-foot (a) width except where it is limited by Los Trancos Creek	Improved pedestrian circulation
Northbound I-280 off-ramp (b)	Shift the crosswalk at the northbound I-280 off-ramp farther east	Improved pedestrian safety
Alpine Road/Piers Lane/Alpine Access Road	Extend the westbound right-turn pocket by 75 feet	Improved vehicular safety
Alpine Road/Piers Lane/Alpine Access Road	Provide a 4-foot wide bike slot adjacent to the westbound right-turn lane	Improved bicycle safety
Entire corridor	Provide dashed green striping in bike lanes within conflict areas	Improved bicycle safety

(a) The initial alternatives developed for the corridor included the widening of the Alpine Road Trail, but feedback from the community indicated that this widening was not supported. This improvement was removed from all subsequent alternatives.

(b) Improvement was subsequently identified as included in Alpine Road Trail Improvements Project and thus was not included in the recommended improvements for this project.



# Alpine Road

## CORRIDOR STUDY PROJECT

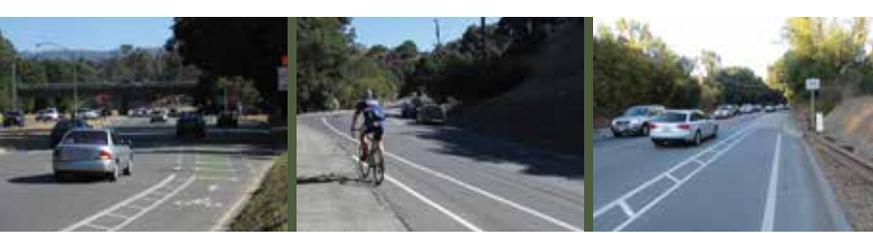
### Alternative 2

The I-280 area improvements for Alternative 2 are listed below in Table 4-7. The preliminary designs for this alternative are provided in Appendix C.

*Table 4-7: I-280 Area Improvements – Alternative 2*

Location	Improvement	Benefit
Entire corridor	Complete an Engineering and Traffic Study to implement and sign a consistent speed limit of 35 miles per hour	Reduced vehicular speeds
I-280 to Piers Lane	Extend the existing 3-foot wide bicycle lane buffer north past Piers Lane	Improved bicycle safety
East side of Alpine Road	Widen the trail to a consistent 8-foot (a) width except where it is limited by Los Trancos Creek	Improved bicycle and pedestrian circulation
Alpine Road/Piers Lane/Alpine Access Road	Extend the westbound right-turn pocket by 75 feet	Improved vehicular safety
Alpine Road/Piers Lane/Alpine Access Road	Provide a 150-foot long westbound left-turn pocket	Improved vehicular safety
Alpine Road/Piers Lane/Alpine Access Road	Provide a 4-foot wide bike slot adjacent to the westbound right-turn lane	Improved bicycle safety
Alpine Road/Piers Lane/Alpine Access Road	Extend the eastbound right-turn pocket by 50 feet	Improved vehicular safety
Alpine Road/Piers Lane/Alpine Access Road	Pave and stripe a parking lot on the east side of Alpine Road with 27 marked stalls that is separated from the roadway; provide access to this lot via right-in/right-out driveways	Improved bicycle, pedestrian, and vehicular safety
Entire corridor	Provide dashed green striping in bike lanes within conflict areas	Improved bicycle safety
Alpine Road/I-280	Install traffic signals at the two Alpine Road/I-280 ramp intersections.	Facilitate side-street access and reduced congestion
Alpine Road/I-280	Extend the right-turn lane for the southbound I-280 loop on-ramp farther east so that drivers merge into the lane east of the northbound ramp	Improved vehicular safety
Alpine Road/I-280	Remove free right turns from both the northbound and southbound off-ramp approaches to Alpine Road.	Improved bicycle, pedestrian, and vehicular safety
Alpine Road/I-280 NB	Extend the northbound on-ramp merge lane	Improved vehicular safety
Alpine Road/I-280 SB	Reconstruct the pedestrian path underpass beneath the I-280 southbound on-ramp to meet ADA-compliant grades	Improved pedestrian safety and access
West side of Alpine Road, south of Alpine Access Road/Piers Lane	Remove roadside parking	Improved vehicular and bicycle safety

(a) The initial alternatives developed for the corridor included the widening of the Alpine Road Trail, but feedback from the community indicated that this widening was not supported. This improvement was removed from all subsequent alternatives.



# Alpine Road

## CORRIDOR STUDY PROJECT

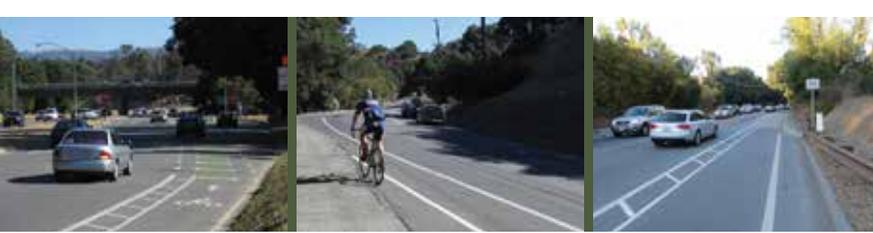
### Alternative 3

The I-280 area improvements for Alternative 3 are listed below in Table 4-8. The preliminary designs for this alternative are provided in Appendix C.

*Table 4-8: I-280 Area Improvements – Alternative 3*

Location	Improvement	Benefit
Entire corridor	Complete an Engineering and Traffic Study to implement and sign a consistent speed limit of 35 miles per hour	Reduced vehicular speeds
I-280 to Piers Lane	Extend the existing 3-foot wide bicycle lane buffer north past Piers Lane	Improved bicycle safety
East side of Alpine Road	Widen the trail to a consistent 8-foot (a) width except where it is limited by Los Trancos Creek	Improved bicycle and pedestrian circulation
Alpine Road/Piers Lane/Alpine Access Road	Extend the westbound right-turn pocket by 75 feet	Improved vehicular safety
Alpine Road/Piers Lane/Alpine Access Road	Provide a 150-foot long westbound left-turn pocket	Improved vehicular safety
Alpine Road/Piers Lane/Alpine Access Road	Provide a 4-foot wide bike slot adjacent to the westbound right-turn lane	Improved bicycle safety
Alpine Road/Piers Lane/Alpine Access Road	Extend the eastbound right-turn pocket by 50 feet	Improved vehicular safety
Alpine Road/Piers Lane/Alpine Access Road	Pave and stripe a parking lot on the east side of Alpine Road with 27 marked stalls that is separated from the roadway; provide access to this lot via right-in/right-out driveways	Improved bicycle, pedestrian, and vehicular safety
Entire corridor	Provide dashed green striping in bike lanes within conflict areas	Improved bicycle safety
Alpine Road/I-280	Install two-lane roundabouts at the two Alpine Road/I-280 ramp intersections.	Facilitate side-street access and reduced congestion
Alpine Road/I-280	At the roundabouts, install ramping to provide access to pedestrian/bicycle mixed-use path	Improved bicycle safety and circulation
Alpine Road/I-280 SB	Reconstruct the pedestrian path underpass beneath the I-280 southbound on-ramp to meet ADA-compliant grades	Improved pedestrian safety and access
West side of Alpine Road, south of Alpine Access Road/Piers Lane	Remove roadside parking	Improved vehicular and bicycle safety

(a) The initial alternatives developed for the corridor included the widening of the Alpine Road Trail, but feedback from the community indicated that this widening was not supported. This improvement was removed from all subsequent alternatives.



# Alpine Road

## CORRIDOR STUDY PROJECT

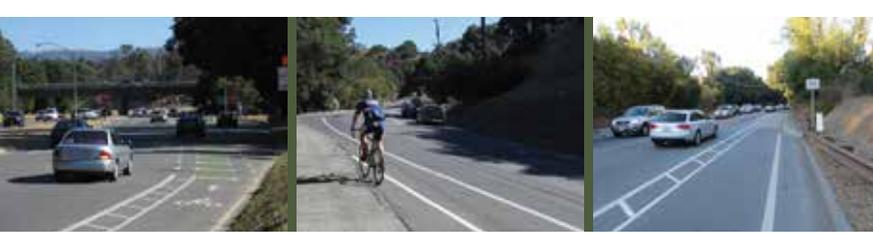
### Alternative 4

The I-280 area improvements for Alternative 4 are listed below in Table 4-9. The preliminary designs for this alternative are provided in Appendix C.

*Table 4-9: I-280 Area Improvements – Alternative 4*

Location	Improvement	Benefit
Entire corridor	Complete an Engineering and Traffic Study to implement and sign a consistent speed limit of 35 miles per hour	Reduced vehicular speeds
I-280 to Piers Lane	Extend the existing 3-foot wide bicycle lane buffer north past Piers Lane	Improved bicycle safety
East side of Alpine Road	Widen the trail to a consistent 8-foot (a) width except where it is limited by Los Trancos Creek	Improved bicycle and pedestrian circulation
Alpine Road/Piers Lane/Alpine Access Road	Extend the westbound right-turn pocket by 75 feet	Improved vehicular safety
Alpine Road/Piers Lane/Alpine Access Road	Provide a 150-foot long westbound left-turn pocket	Improved vehicular safety
Alpine Road/Piers Lane/Alpine Access Road	Provide a 4-foot wide bike slot adjacent to the westbound right-turn lane	Improved bicycle safety
Alpine Road/Piers Lane/Alpine Access Road	Extend the eastbound right-turn pocket by 50 feet	Improved vehicular safety
Alpine Road/Piers Lane/Alpine Access Road	Pave and stripe a parking lot on the east side of Alpine Road with 27 marked stalls that is separated from the roadway; provide access to this lot via right-in/right-out driveways	Improved bicycle, pedestrian, and vehicular safety
Entire corridor	Provide dashed green striping in bike lanes within conflict areas	Improved bicycle safety
Alpine Road/I-280	Install traffic signals at the two Alpine Road/I-280 ramp intersections.	Facilitate side-street access and reduced congestion
Alpine Road/I-280	Extend the right-turn lane for the southbound I-280 loop on-ramp farther east so that drivers merge into the lane east of the northbound ramp	Improved vehicular safety
Alpine Road/I-280	Remove free right turns from both the northbound and southbound off-ramp approaches to Alpine Road.	Improved bicycle, pedestrian, and vehicular safety
Alpine Road/I-280 NB	Extend the northbound on-ramp merge lane	Improved vehicular safety
Alpine Road/I-280 SB	Remove the existing on-ramp from northbound Alpine Road to southbound I-280	Improved bicycle and vehicular safety
Alpine Road/I-280 SB	Remove the existing path below the southbound I-280 on-ramp and construct a new 8-foota wide path adjacent to Alpine Road	Improved pedestrian circulation
West side of Alpine Road, south of Alpine Access Road/Piers Lane	Remove roadside parking	Improved vehicular and bicycle safety

(a) The initial alternatives developed for the corridor included the widening of the Alpine Road Trail, but feedback from the community indicated that this widening was not supported. This improvement was removed from all subsequent alternatives.



# Alpine Road

## CORRIDOR STUDY PROJECT

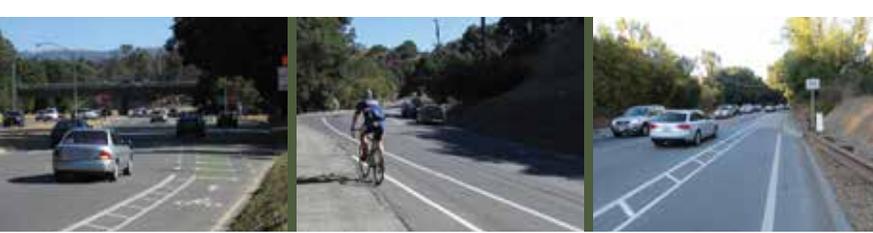
### Alternative 5

The I-280 area improvements for Alternative 5 are listed below in Table 4-10. The preliminary designs for this alternative are provided in Appendix C.

*Table 4-10: I-280 Area Improvements – Alternative 5*

Location	Improvement	Benefit
Entire corridor	Complete an Engineering and Traffic Study to implement and sign a consistent speed limit of 35 miles per hour	Reduced vehicular speeds
I-280 to Piers Lane	Extend the existing 3-foot wide bicycle lane buffer north past Piers Lane	Improved bicycle safety
East side of Alpine Road	Widen the trail to a consistent 8-foot (a) width except where it is limited by Los Trancos Creek	Improved bicycle and pedestrian circulation
Alpine Road/Piers Lane/Alpine Access Road	Extend the westbound right-turn pocket by 75 feet	Improved vehicular safety
Alpine Road/Piers Lane/Alpine Access Road	Provide a 150-foot long westbound left-turn pocket	Improved vehicular safety
Alpine Road/Piers Lane/Alpine Access Road	Provide a 4-foot wide bike slot adjacent to the westbound right-turn lane	Improved bicycle safety
Alpine Road/Piers Lane/Alpine Access Road	Extend the eastbound right-turn pocket by 50 feet	Improved vehicular safety
Alpine Road/Piers Lane/Alpine Access Road	Pave and stripe a parking lot on the east side of Alpine Road with 27 marked stalls that is separated from the roadway; provide access to this lot via right-in/right-out driveways	Improved bicycle, pedestrian, and vehicular safety
Entire corridor	Provide dashed green striping in bike lanes within conflict areas	Improved bicycle safety
Alpine Road/I-280	Install two-lane roundabouts at the two Alpine Road/I-280 ramp intersections.	Facilitate side-street access and reduced congestion
Alpine Road/I-280	At the roundabouts, install ramping to provide access to pedestrian/bicycle mixed-use path	Improved bicycle safety and circulation
Alpine Road/I-280 SB	Reconstruct the pedestrian path underpass beneath the I-280 southbound on-ramp to meet ADA-compliant grades	Improved pedestrian safety and access
West side of Alpine Road, south of Alpine Access Road/Piers Lane	Remove roadside parking	Improved vehicular and bicycle safety

*(a) The initial alternatives developed for the corridor included the widening of the Alpine Road Trail, but feedback from the community indicated that this widening was not supported. This improvement was removed from all subsequent alternatives.*



# Alpine Road

## CORRIDOR STUDY PROJECT

### 4.3. Stanford Weekend Acres Area Improvements

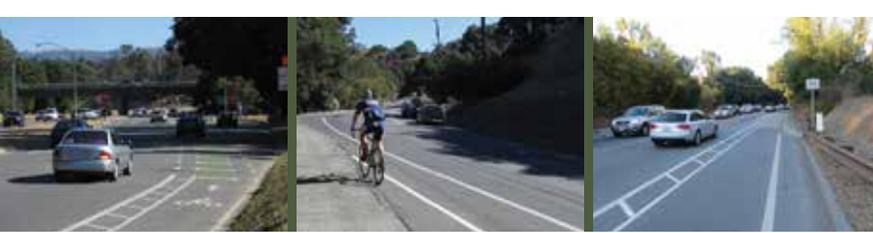
#### Alternative 1

The Stanford Weekend Acres area improvements for Alternative 1 are listed below in Table 4-11. The preliminary designs for this alternative are provided in Appendix C.

*Table 4-11: Stanford Weekend Acres Area Improvements – Alternative 1*

Location	Improvement	Benefit
Entire corridor	Complete an Engineering and Traffic Study to implement and sign a consistent speed limit of 35 miles per hour	Reduced vehicular speeds
Alpine Road/Wildwood Lane	Install speed feedback signs in both northbound and southbound directions	Reduced vehicular speeds
East side of Alpine Road between Piers Lane and Bishop Lane	Extend the existing guardrail and install additional object markers	Improved vehicular and pedestrian safety
East side of Alpine Road	Widen the pedestrian path to a consistent 8-foot (a) width except where it is limited by right-of-way and slope; driveway access would be preserved	Improved bicycle and pedestrian circulation
Alpine Road/Bishop Lane; Alpine Road/Wildwood Lane	Trim vegetation from the roadside to improve sight distance for cars turning onto Alpine Road	Facilitate side-street access and improved vehicular safety
Alpine Road/Bishop Lane	Shift the Bishop Lane stop bar closer to Alpine Road	Facilitate side street access and improved vehicular safety
Alpine Road/Wildwood Lane	Provide a pullout for the bus stop on southbound Alpine Road and provide improved amenities	Improved vehicular safety, transit access and improved pedestrian and bicycle safety
Alpine Road/Stowe Lane	Provide a pullout for the bus stop on northbound Alpine Road and provide improved amenities	Improved vehicular safety, transit access and improved pedestrian and bicycle safety
Alpine Road/Stowe Lane	Pave an 8-foot (a) wide path between Stowe Lane and the existing multi-use path entrance north of Stowe Lane; separated from Alpine Road where feasible	Improved bicycle and pedestrian safety and circulation

(a) The initial alternatives developed for the corridor included the widening of the Alpine Road Trail, but feedback from the community indicated that this widening was not supported. This improvement was removed from all subsequent alternatives.



# Alpine Road

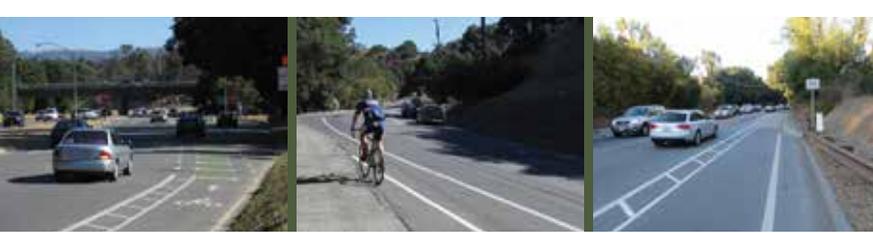
## CORRIDOR STUDY PROJECT

### Alternative 2

The Stanford Weekend Acres area improvements for Alternative 2 are listed below in Table 4-12. The preliminary designs for this alternative are provided in Appendix C.

*Table 4-12: Stanford Weekend Acres Area Improvements – Alternative 2*

Location	Improvement	Benefit
Entire corridor	Complete an Engineering and Traffic Study to implement and sign a consistent speed limit of 35 miles per hour	Reduced vehicular speeds
Alpine Road/Wildwood Lane	Install speed feedback signs in both northbound and southbound directions	Reduced vehicular speeds
East side of Alpine Road between Piers Lane and Bishop Lane	Extend the existing guardrail and install additional object markers	Improved vehicular and pedestrian safety
East side of Alpine Road	Widen the pedestrian path to a consistent 8-foot (a) width except where it is limited by right-of-way and slope; driveway access would be preserved	Improved bicycle and pedestrian circulation
Alpine Road/Bishop Lane; Alpine Road/Wildwood Lane	Trim vegetation from the roadside to improve sight distance for cars turning onto Alpine Road	Facilitate side-street access and improved vehicular safety
Alpine Road/Bishop Lane	Shift the Bishop Lane stop bar closer to Alpine Road	Facilitate side street access and improve vehicular safety
Alpine Road/Bishop Lane	Install a crosswalk and ADA ramps	Improved pedestrian safety and connectivity
Alpine Road/Bishop Lane	Provide a 6-foot wide marked path through Bishop Lane to provide continuity for the Alpine Road Trail (b)	Improved pedestrian and bicycle connectivity
Alpine Road/Bishop Lane	Pave an on-street parking area adjacent to the newly-marked path through Bishop Lane (b)	Improved pedestrian and bicycle connectivity
Alpine Road/Bishop Lane	Extend the southbound left-turn pocket by 100 feet and extend the southbound acceleration lane by 100 feet	Facilitate side street access and improved vehicular safety
Alpine Road/Wildwood Lane	Provide a pullout for the bus stop on southbound Alpine Road and provide improved amenities	Improved vehicular safety, transit access and improved pedestrian and bicycle safety
Alpine Road/Wildwood Lane	Remove on-street parking on Wildwood Lane and provide a pedestrian marked path through Wildwood Lane to provide continuity for the Alpine Road Trail	Improved bicycle and pedestrian connectivity
Near Wildwood Lane and Stowe Lane	Restripe the roadway to provide a consistent 5-foot wide bike lane	Improved bicycle safety



# Alpine Road

## CORRIDOR STUDY PROJECT

Location	Improvement	Benefit
Between Bishop Lane and Stowe Lane	Provide a two-way left-turn lane	Facilitate side street access and improved vehicular safety
Alpine Road/Stowe Lane	Provide a pullout for the bus stop on northbound Alpine Road and provide improved amenities	Improved vehicular safety, transit access and improved pedestrian and bicycle safety
Alpine Road/Stowe Lane	Extend the southbound left-turn pocket by 200 feet	Improved vehicular safety
Alpine Road/Stowe Lane	Pave an 8-foot (a) wide path between Stowe Lane and the existing multi-use path entrance north of Stowe Lane; pave path adjacent to roadway shoulder	Improved bicycle and pedestrian safety and circulation

(a) The initial alternatives developed for the corridor included the widening of the Alpine Road Trail, but feedback from the community indicated that this widening was not supported. This improvement was removed from all subsequent alternatives.

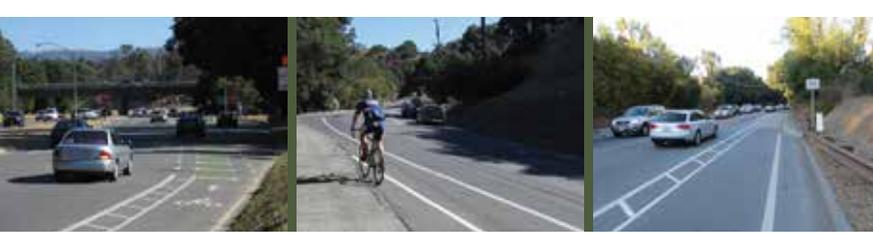
(b) The initial alternatives developed for the corridor included pedestrian improvements on Bishop Lane, but feedback from the community indicated that they were not supported. These improvements were removed from all subsequent alternatives.

### Alternative 3

The Stanford Weekend Acres area improvements for Alternative 3 are listed below in Table 4-13. The preliminary designs for this alternative are provided in Appendix C.

*Table 4-13: Stanford Weekend Acres Area Improvements – Alternative 3*

Location	Improvement	Benefit
Entire corridor	Complete an Engineering and Traffic Study to implement and sign a consistent speed limit of 35 miles per hour	Reduced vehicular speeds
Alpine Road/Wildwood Lane	Install speed feedback signs in both northbound and southbound directions	Reduced vehicular speeds
East side of Alpine Road between Piers Lane and Bishop Lane	Extend the existing guardrail and install additional object markers	Improved vehicular and pedestrian safety
East side of Alpine Road	Widen the pedestrian path to a consistent 8-foot (a) width except where it is limited by right-of-way and slope; driveway access would be preserved	Improved bicycle and pedestrian circulation
Alpine Road/Bishop Lane; Alpine Road/Wildwood Lane	Trim vegetation from the roadside to improve sight distance for cars turning onto Alpine Road	Facilitate side-street access and improved vehicular safety
Alpine Road/Bishop Lane	Shift the Bishop Lane stop bar closer to Alpine Road	Facilitate side street access and improve vehicular safety



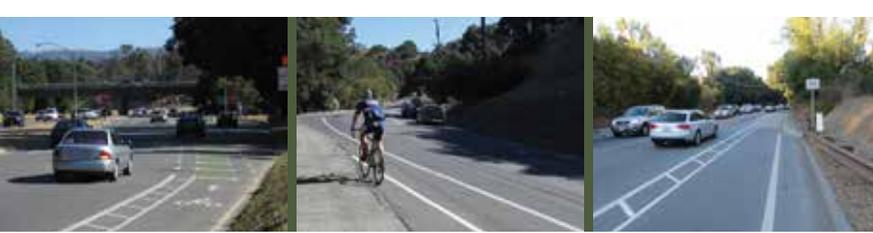
# Alpine Road

## CORRIDOR STUDY PROJECT

Location	Improvement	Benefit
Alpine Road/Bishop Lane	Install a crosswalk and ADA ramps	Improved pedestrian safety and connectivity
Alpine Road/Bishop Lane	Provide a 6-foot wide marked path through Bishop Lane to provide continuity for the Alpine Road Trail (b)	Improved pedestrian and bicycle connectivity
Alpine Road/Bishop Lane	Pave an on-street parking area adjacent to the newly-marked path through Bishop Lane (b)	Improved pedestrian and bicycle connectivity
Alpine Road/Bishop Lane	Extend the southbound left-turn pocket by 100 feet and extend the southbound acceleration lane by 100 feet	Facilitate side street access and improved vehicular safety
Alpine Road/Wildwood Lane	Provide a pullout for the bus stop on southbound Alpine Road and provide improved amenities	Improved vehicular safety, transit access and improved pedestrian and bicycle safety
Alpine Road/Wildwood Lane	Remove on-street parking on Wildwood Lane and provide a pedestrian marked path through Wildwood Lane to provide continuity for the Alpine Road Trail	Improved bicycle and pedestrian connectivity
Near Wildwood Lane and Stowe Lane	Restripe the roadway to provide a consistent 5-foot wide bike lane	Improved bicycle safety
Between Bishop Lane and Stowe Lane	Provide a two-way left-turn lane	Facilitate side street access and improved vehicular safety
Alpine Road/Stowe Lane	Provide a pullout for the bus stop on northbound Alpine Road and provide improved amenities	Improved vehicular safety, transit access and improved pedestrian and bicycle safety
Alpine Road/Stowe Lane	Extend the southbound left-turn pocket by 200 feet	Improved vehicular safety
Alpine Road/Stowe Lane	Pave an 8-foot (a) wide path between Stowe Lane and the existing multi-use path entrance north of Stowe Lane; pave path adjacent to roadway shoulder	Improved bicycle and pedestrian safety and circulation

(a) The initial alternatives developed for the corridor included the widening of the Alpine Road Trail, but feedback from the community indicated that this widening was not supported. This improvement was removed from all subsequent alternatives.

(b) The initial alternatives developed for the corridor included pedestrian improvements on Bishop Lane, but feedback from the community indicated that they were not supported. These improvements were removed from all subsequent alternatives.



# Alpine Road

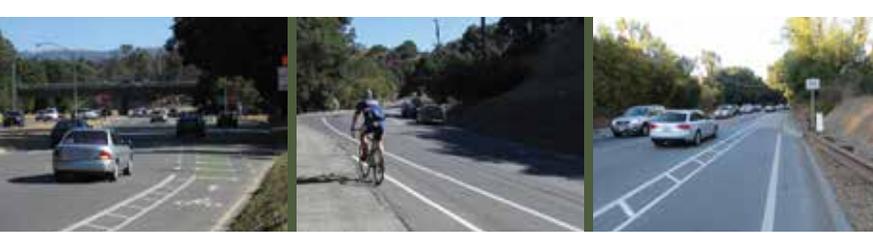
## CORRIDOR STUDY PROJECT

### Alternative 4

The Stanford Weekend Acres area improvements for Alternative 4 are listed below in Table 4-14. The preliminary designs for this alternative are provided in Appendix C.

*Table 4-14: Stanford Weekend Acres Area Improvements – Alternative 4*

Location	Improvement	Benefit
Entire corridor	Complete an Engineering and Traffic Study to implement and sign a consistent speed limit of 35 miles per hour	Reduced vehicular speeds
Alpine Road/Wildwood Lane	Install speed feedback signs in both northbound and southbound directions	Reduced vehicular speeds
East side of Alpine Road between Piers Lane and Bishop Lane	Extend the existing guardrail and install additional object markers	Improved vehicular and pedestrian safety
East side of Alpine Road	Widen the pedestrian path to a consistent 8-foot (a) width except where it is limited by right-of-way and slope; driveway access would be preserved	Improved bicycle and pedestrian circulation
Alpine Road/Bishop Lane; Alpine Road/Wildwood Lane	Trim vegetation from the roadside to improve sight distance for cars turning onto Alpine Road	Facilitate side-street access and improved vehicular safety
Alpine Road/Bishop Lane	Shift the Bishop Lane stop bar closer to Alpine Road	Facilitate side street access and improve vehicular safety
Alpine Road/Bishop Lane	Install a crosswalk and ADA ramps	Improved pedestrian safety and connectivity
Alpine Road/Bishop Lane	Provide a 6-foot wide marked path through Bishop Lane to provide continuity for the Alpine Road Trail (b)	Improved pedestrian and bicycle connectivity
Alpine Road/Bishop Lane	Pave an on-street parking area adjacent to the newly-marked path through Bishop Lane (b)	Improved pedestrian and bicycle connectivity
Alpine Road/Bishop Lane	Extend the southbound left-turn pocket by 100 feet and extend the southbound acceleration lane by 100 feet	Facilitate side street access and improved vehicular safety
Alpine Road/Wildwood Lane	Provide a pullout for the bus stop on southbound Alpine Road and provide improved amenities	Improved vehicular safety, transit access and improved pedestrian and bicycle safety
Alpine Road/Wildwood Lane	Close both existing entrances to Wildwood Lane and consolidate access to Wildwood Lane at one driveway located between the two existing driveways	Facilitate side street access and improved vehicular safety
Near Wildwood Lane and Stowe Lane	Restripe the roadway to provide a consistent 5-foot wide bike lane	Improved bicycle safety



# Alpine Road

## CORRIDOR STUDY PROJECT

Location	Improvement	Benefit
Between Bishop Lane and Stowe Lane	Provide a two-way left-turn lane	Facilitate side street access and improved vehicular safety
Alpine Road/Stowe Lane	Provide a pullout for the bus stop on northbound Alpine Road and provide improved amenities	Improved vehicular safety, transit access and improved pedestrian and bicycle safety
Alpine Road/Stowe Lane	Extend the southbound left-turn pocket by 200 feet	Improved vehicular safety
Alpine Road/Stowe Lane	Pave a 10-foot (a) wide path between Stowe Lane and the existing multi-use path north of Stowe Lane (path extension would be entirely separated from the roadway), and close the existing multi-use path entrance on Alpine Road	Improved bicycle and pedestrian safety and circulation

(a) The initial alternatives developed for the corridor included the widening of the Alpine Road Trail, but feedback from the community indicated that this widening was not supported. This improvement was removed from all subsequent alternatives.

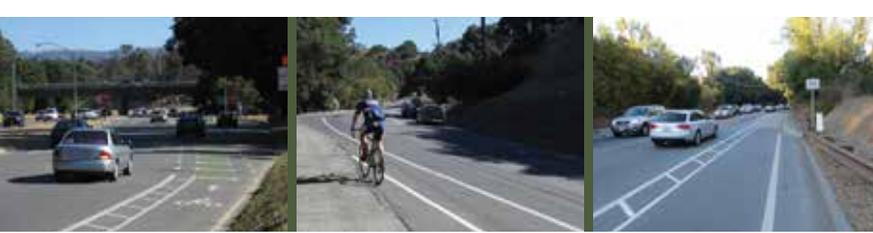
(b) The initial alternatives developed for the corridor included pedestrian improvements on Bishop Lane, but feedback from the community indicated that they were not supported. These improvements were removed from all subsequent alternatives.

### Alternative 5

The Stanford Weekend Acres area improvements for Alternative 5 are listed below in Table 4-15. The preliminary designs for this alternative are provided in Appendix C.

*Table 4-15: Stanford Weekend Acres Area Improvements – Alternative 5*

Location	Improvement	Benefit
Entire corridor	Complete an Engineering and Traffic Study to implement and sign a consistent speed limit of 35 miles per hour	Reduced vehicular speeds
Alpine Road/Wildwood Lane	Install speed feedback signs in both northbound and southbound directions	Reduced vehicular speeds
East side of Alpine Road between Piers Lane and Bishop Lane	Extend the existing guardrail and install additional object markers	Improved vehicular and pedestrian safety
East side of Alpine Road	Widen the pedestrian path to a consistent 8-foot (a) width except where it is limited by right-of-way and slope; driveway access would be preserved	Improved bicycle and pedestrian circulation
Alpine Road/Bishop Lane; Alpine Road/Wildwood Lane	Trim vegetation from the roadside to improve sight distance for cars turning onto Alpine Road	Facilitate side-street access and improved vehicular safety
Alpine Road/Bishop Lane	Shift the Bishop Lane stop bar closer to Alpine Road	Facilitate side street access and improve vehicular safety



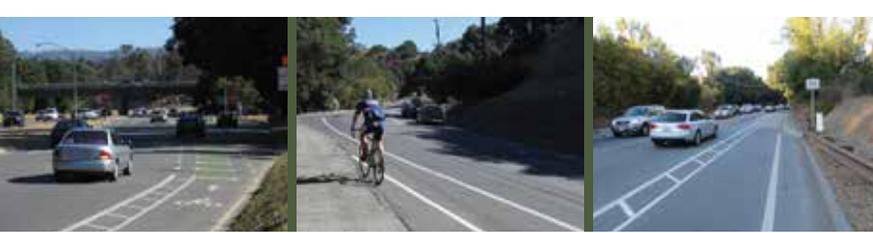
# Alpine Road

## CORRIDOR STUDY PROJECT

Location	Improvement	Benefit
Alpine Road/Bishop Lane	Install a crosswalk and ADA ramps	Improved pedestrian safety and connectivity
Alpine Road/Bishop Lane	Provide a 6-foot wide marked path through Bishop Lane to provide continuity for the Alpine Road Trail (b)	Improved pedestrian and bicycle connectivity
Alpine Road/Bishop Lane	Pave an on-street parking area adjacent to the newly-marked path through Bishop Lane (b)	Improved pedestrian and bicycle connectivity
Alpine Road/Bishop Lane	Extend the southbound left-turn pocket by 100 feet and extend the southbound acceleration lane by 100 feet	Facilitate side street access and improved vehicular safety
Alpine Road/Wildwood Lane	Provide a pullout for the bus stop on southbound Alpine Road and provide improved amenities	Improved vehicular safety, transit access and improved pedestrian and bicycle safety
Alpine Road/Wildwood Lane	Close both existing entrances to Wildwood Lane and consolidate access to Wildwood Lane at one driveway located between the two existing driveways	Facilitate side street access and improved vehicular safety
Near Wildwood Lane and Stowe Lane	Restripe the roadway to provide a consistent 5-foot wide bike lane	Improved bicycle safety
Between Bishop Lane and Stowe Lane	Provide a two-way left-turn lane	Facilitate side street access and improved vehicular safety
Alpine Road/Stowe Lane	Provide a pullout for the bus stop on northbound Alpine Road and provide improved amenities	Improved vehicular safety, transit access and improved pedestrian and bicycle safety
Alpine Road/Stowe Lane	Extend the southbound left-turn pocket by 200 feet	Improved vehicular safety
Alpine Road/Stowe Lane	Pave a 10-foot (a) wide path between Stowe Lane and the existing multi-use path north of Stowe Lane (path extension would be entirely separated from the roadway), and close the existing multi-use path entrance on Alpine Road	Improved bicycle and pedestrian safety and circulation

(a) The initial alternatives developed for the corridor included the widening of the Alpine Road Trail, but feedback from the community indicated that this widening was not supported. This improvement was removed from all subsequent alternatives.

(b) The initial alternatives developed for the corridor included pedestrian improvements on Bishop Lane, but feedback from the community indicated that they were not supported. These improvements were removed from all subsequent alternatives.



# Alpine Road

## CORRIDOR STUDY PROJECT

## 5. Alternatives Analysis

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### 5.1. Traffic Metrics

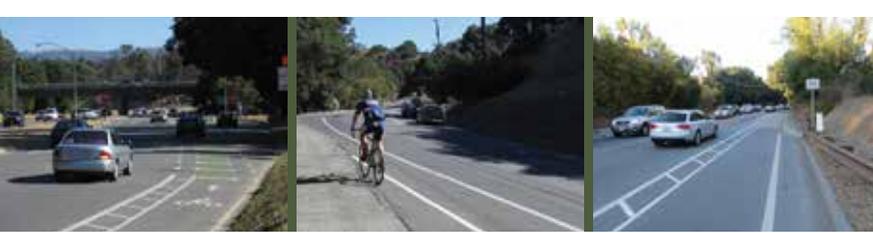
The alternatives were modeled using VISSIM micro-simulation software to analyze their impact on corridor flow, vehicle delay, and queueing. The results of this analysis are presented by alternative in the following section. Analysis for Alternative 1 is not included since the improvements in that alternative were focused on safety and bicycle/pedestrian circulation and had no significant impact on vehicle delay or congestion.

#### Alternative 2

Improvements included in Alternative 2 that affect circulation metrics (discussed in greater detail in the preceding chapters) are:

- Installation of signals at Alpine Road/La Cuesta Drive, Alpine Road/I-280 SB, and Alpine Road/I-280 NB.
- Widening of eastbound approach at Alpine Road/La Cuesta Drive to provide two turn lanes.
- Removal of free-right turns at I-280 off-ramps.
- Extension of turn pockets at Alpine Road/La Cuesta Drive, Alpine Road/Piers Lane/Alpine Access Road, Alpine Road/Bishop Lane, and Alpine Road/Stowe Lane.
- Extension of the acceleration lane at Alpine Road/Bishop Lane.
- Addition of a left-turn pocket at Alpine Road/Piers Lane/Alpine Access Road.
- Provision of a two-way left-turn lane between Bishop Lane and Stowe Lane.

The Alternative 2 delay and level of service results are provided in Table 5-1 and Table 5-2. Detailed queueing analysis results are provided in Appendix D.



# Alpine Road

## CORRIDOR STUDY PROJECT

Table 5-1: Alternative 2 Near-Term (2020) Intersection Delay and Level of Service Results

Study Intersection	No Improvements							Alternative 2						
	Control	AM Peak (7:30-8:30 AM)		MD Peak (3-4 PM)		PM Peak (5-6 PM)		Control	AM Peak		MD Peak		PM Peak	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Stowe / Alpine	SSSC	5.3	A	38.1	E	21.6	C	SSSC	9.1	A	6.5	A	6.7	A
Wildwood / Alpine	SSSC	36.6	E	34.5	D	>120	F	SSSC	15.5	C	8.7	A	8.9	A
Bishop / Alpine	SSSC	17.1	C	42.8	E	23.2	C	SSSC	16.7	C	7.8	A	7.7	A
Piers-Alpine Access / Alpine	SSSC	25.9	D	>120	F	>120	F	SSSC	19.7	C	18.7	C	18.1	C
I-280 NB Ramps / Alpine	AWSC	17.2	C	52.3	F	38.9	E	Signal	32.8	C	18.4	B	14.3	B
I-280 SB Ramps / Alpine	SSSC	15.6	C	3.8	A	4.7	A	Signal	20.3	C	18.1	B	24.5	C
Golf-San Francisquito / Alpine	SSSC	23.7	C	13.9	B	14.0	B	SSSC	19.0	C	14.7	B	16.8	C
La Cuesta / Alpine	SSSC	16.3	C	13.8	B	14.6	B	Signal	8.0	A	8.0	A	9.0	A
La Mesa / Alpine	SSSC	13.6	B	10.1	B	10.8	B	SSSC	16.0	C	11.5	B	11.8	B

Notes:

(a) SSSC = Side-street Stop-Control; AWSC = All-Way Stop-Control; Signal = Signalized

(b) Delay represents worst minor street approach movement for SSSC intersections. Delay represents average intersection delay for signalized intersections.



# Alpine Road

## CORRIDOR STUDY PROJECT

Table 5-2: Alternative 2 Long-Term (2040) Intersection Delay and Level of Service Results

Study Intersection	No Improvements							Alternative 2						
	Control	AM Peak (7:30-8:30 AM)		MD Peak (3-4 PM)		PM Peak (5-6 PM)		Control	AM Peak		MD Peak		PM Peak	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Stowe / Alpine	SSSC	9.9	A	41.0	E	22.2	C	SSSC	16.4	C	5.2	A	7.6	A
Wildwood / Alpine	SSSC	>120	F	39.7	E	>120	F	SSSC	22.8	C	10.8	B	9.6	A
Bishop / Alpine	SSSC	>120	F	44.1	E	23.9	C	SSSC	21.5	C	8.3	A	8.1	A
Piers-Alpine Access / Alpine	SSSC	42.4	E	>120	F	>120	F	SSSC	24.9	C	47.0	E	26.6	D
I-280 NB Ramps / Alpine	AWSC	29.0	D	50.4	F	38.1	E	Signal	39.9	D	20.6	C	16.1	B
I-280 SB Ramps / Alpine	SSSC	51.2	F	4.0	A	5.0	A	Signal	30.6	C	24.4	C	29.3	C
Golf-San Francisquito / Alpine	SSSC	30.2	D	15.8	C	17.6	C	SSSC	45.0	E	18.2	C	19.9	C
La Cuesta / Alpine	SSSC	19.2	C	14.4	B	16.8	C	Signal	8.9	A	8.8	A	9.4	A
La Mesa / Alpine	SSSC	14.8	B	10.4	B	11.0	B	SSSC	22.8	C	12.4	B	13.1	B

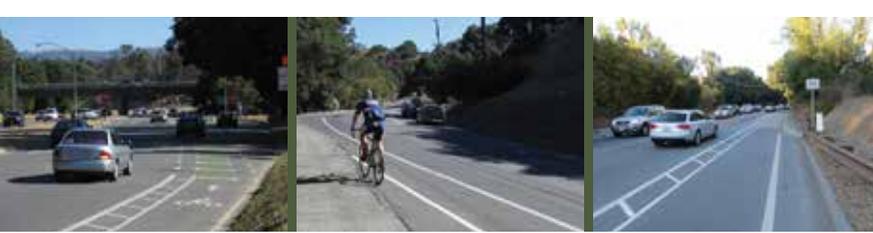
**Notes:**

(a) SSSC = Side-street Stop-Control; AWSC = All-Way Stop-Control; Signal = Signalized

(b) Delay represents worst minor street approach movement for SSSC intersections. Delay represents average intersection delay for signalized intersections.

As shown in the tables above, Alternative 2 results in significant improvements to delay and level of service throughout the corridor, particularly at the intersections at and north of the I-280 interchange. This is reflective of the fact that the installation of signals at the I-280 intersections would create gaps in traffic that better facilitate side-street access and reduce delay for cars turning on or off Alpine Road.

Table 5-3 shows Alternative 2 travel time results in comparison to no improvements for the near-term and long-term. Alternative 2 results in major decreases in travel times, particularly in peak directions.



# Alpine Road

## CORRIDOR STUDY PROJECT

Table 5-3: Alternative 2 Corridor Travel Times

Direction	From	To	No Improvements			Alternative 2		
			AM Peak (7:30- 8:30)	Midday Peak (3-4 PM)	PM Peak (5-6 PM)	AM Peak	MD Peak	PM Peak
<b>Near-Term (2020)</b>								
Northbound	Portola Valley	Menlo Park	4.1	3.4	3.4	4.0	3.6	3.5
			-	-	-	-2%	4%	2%
Southbound	Menlo Park	Portola Valley	4.0	13.1	9.6	4.9	4.4	4.4
			-	-	-	25%	-67%	-54%
<b>Long-Term (2040)</b>								
Northbound	Portola Valley	Menlo Park	7.0	3.5	3.5	4.3	3.6	3.6
			-	-	-	-38%	3%	2%
Southbound	Menlo Park	Portola Valley	4.1	14.0	9.7	5.3	4.6	4.4
			-	-	-	28%	-67%	-55%

**Notes:**

Travel times represent the average travel time per vehicle driving between La Mesa Drive and Stowe Lane, inclusive, in the indicated peak hour.

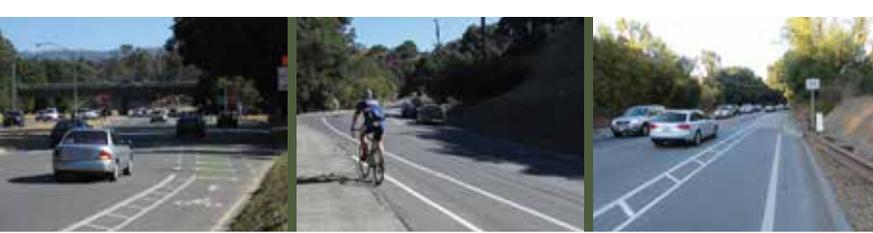
All alternatives include signal coordination and modifications to signal timing parameters.

### Alternative 3

Improvements included in Alternative 3 that affect circulation metrics (discussed in greater detail in the preceding chapters) are:

- Installation of roundabouts at Alpine Road/La Cuesta Drive, Alpine Road/I-280 SB, and Alpine Road/I-280 NB.
- Extension of turn pockets at Alpine Road/Piers Lane/Alpine Access Road, Alpine Road/Bishop Lane, and Alpine Road/Stowe Lane.
- Extension of the acceleration lane at Alpine Road/Bishop Lane.
- Addition of a left-turn pocket at Alpine Road/Piers Lane/Alpine Access Road.
- Provision of a two-way left-turn lane between Bishop Lane and Stowe Lane.

The Alternative 3 delay and level of service results are provided in Table 5-4 and Table 5-5. Detailed queueing analysis results are provided in Appendix D.



# Alpine Road

## CORRIDOR STUDY PROJECT

Table 5-4: Alternative 3 Near-Term (2020) Intersection Delay and Level of Service Results

Study Intersection	No Improvements							Alternative 3						
	Control	AM Peak (7:30-8:30 AM)		MD Peak (3-4 PM)		PM Peak (5-6 PM)		Control	AM Peak		MD Peak		PM Peak	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Stowe / Alpine	SSSC	5.3	A	38.1	E	21.6	C	SSSC	9.1	A	5.8	A	6.6	A
Wildwood / Alpine	SSSC	36.6	E	34.5	D	>120	F	SSSC	19.6	C	10.3	B	11.8	B
Bishop / Alpine	SSSC	17.1	C	42.8	E	23.2	C	SSSC	16.9	C	7.5	A	7.7	A
Piers-Alpine Access / Alpine	SSSC	25.9	D	>120	F	>120	F	SSSC	23.1	C	15.0	C	27.9	D
I-280 NB Ramps / Alpine	AWSC	17.2	C	52.3	F	38.9	E	RAB	9.6	A	10.0	A	4.5	A
I-280 SB Ramps / Alpine	SSSC	15.6	C	3.8	A	4.7	A	RAB	4.0	A	1.8	A	1.7	A
Golf-San Francisquito / Alpine	SSSC	23.7	C	13.9	B	14.0	B	SSSC	14.2	B	16.8	C	18.4	C
La Cuesta / Alpine	SSSC	16.3	C	13.8	B	14.6	B	RAB	2.0	A	13.4	B	9.2	A
La Mesa / Alpine	SSSC	13.6	B	10.1	B	10.8	B	SSSC	15.3	C	11.4	B	11.3	B

Notes:

(a) SSSC = Side-street Stop-Control; AWSC = All-Way Stop-Control; Signal = Signalized

(b) Delay represents worst minor street approach movement for SSSC intersections. Delay represents average intersection delay for signalized intersections.



# Alpine Road

## CORRIDOR STUDY PROJECT

Table 5-5: Alternative 3 Long-Term (2040) Intersection Delay and Level of Service Results

Study Intersection	No Improvements							Alternative 3						
	Control	AM Peak (7:30-8:30 AM)		MD Peak (3-4 PM)		PM Peak (5-6 PM)		Control	AM Peak		MD Peak		PM Peak	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Stowe / Alpine	SSSC	9.9	A	41.0	E	22.2	C	SSSC	20.5	C	6.9	A	7.5	A
Wildwood / Alpine	SSSC	>120	F	39.7	E	>120	F	SSSC	21.2	C	10.3	B	11.9	B
Bishop / Alpine	SSSC	>120	F	44.1	E	23.9	C	SSSC	25.4	D	8.7	A	8.6	A
Piers-Alpine Access / Alpine	SSSC	42.4	E	>120	F	>120	F	SSSC	29.7	D	18.9	C	41.9	E
I-280 NB Ramps / Alpine	AWSC	29.0	D	50.4	F	38.1	E	RAB	37.8	E	15.9	C	6.1	A
I-280 SB Ramps / Alpine	SSSC	51.2	F	4.0	A	5.0	A	RAB	44.0	E	2.1	A	2.2	A
Golf-San Francisquito / Alpine	SSSC	30.2	D	15.8	C	17.6	C	SSSC	>120	F	19.6	C	25.6	D
La Cuesta / Alpine	SSSC	19.2	C	14.4	B	16.8	C	RAB	33.7	D	20.9	C	15.3	C
La Mesa / Alpine	SSSC	14.8	B	10.4	B	11.0	B	SSSC	19.4	C	12.5	B	15.1	C

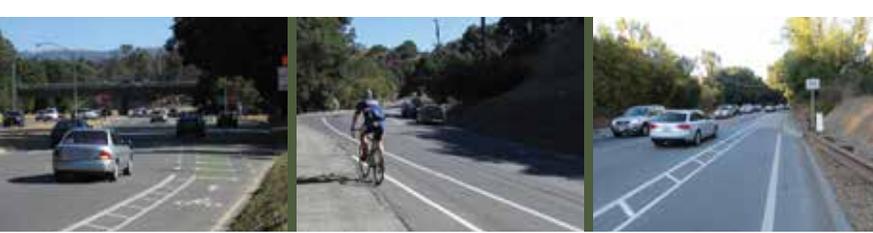
**Notes:**

(a) SSSC = Side-street Stop-Control; AWSC = All-Way Stop-Control; Signal = Signalized; RAB = Roundabout

(b) Delay represents worst minor street approach movement for SSSC intersections. Delay represents average intersection delay for signalized intersections.

As shown in the tables above, Alternative 3 results in significant improvements to delay and level of service throughout the corridor, particularly at the intersections at and north of I-280. Based on these results, it is anticipated the roundabouts at I-280 would be operating near capacity by 2040. There are no feasible improvements to the roundabouts to increase their capacity to better improve future traffic volumes without compromising the safety of the roundabouts for autos, bicyclists and pedestrians.

Table 5-6 shows the Alternative 3 travel time results in comparison to a no improvements alternative for the near-term and long-term scenarios. Alternative 3 results in major decreases in travel times, particularly in peak directions.



# Alpine Road

## CORRIDOR STUDY PROJECT

Table 5-6: Alternative 3 Corridor Travel Times

Direction	From	To	No Improvements			Alternative 3		
			AM Peak (7:30- 8:30)	Midday Peak (3-4 PM)	PM Peak (5-6 PM)	AM Peak	MD Peak	PM Peak
<b>Near-Term (2020)</b>								
Northbound	Portola Valley	Menlo Park	4.1	3.4	3.4	3.6	3.7	3.6
			-	-	-	-12%	7%	5%
Southbound	Menlo Park	Portola Valley	4.0	13.1	9.6	4.1	4.3	4.0
			-	-	-	3%	-67%	-59%
<b>Long-Term (2040)</b>								
Northbound	Portola Valley	Menlo Park	7.0	3.5	3.5	4.6	4.0	3.9
			-	-	-	-33%	14%	11%
Southbound	Menlo Park	Portola Valley	4.1	14.0	9.7	4.7	5.6	4.3
			-	-	-	14%	-60%	-56%

**Notes:**

Travel times represent the average travel time per vehicle driving between La Mesa Drive and Stowe Lane, inclusive, in the indicated peak hour.

All alternatives include signal coordination and modifications to signal timing parameters.

### Alternative 4

Improvements included in Alternative 4 that affect circulation metrics (discussed in greater detail in the preceding chapters) are:

- Installation of signals at Alpine Road/La Mesa Drive, Alpine Road/La Cuesta Drive, Alpine Road/I-280 SB, and Alpine Road/I-280 NB.
- Widening of eastbound approach at Alpine Road/La Cuesta Drive to provide two turn lanes.
- Removal of free-right turns at I-280 off-ramps.
- Removal of the I-280 southbound on-ramp from northbound Alpine Road.
- Extension of turn pockets at Alpine Road/La Cuesta Drive, Alpine Road/Piers Lane/Alpine Access Road, Alpine Road/Bishop Lane, and Alpine Road/Stowe Lane.
- Extension of the acceleration lane at Alpine Road/Bishop Lane.
- Addition of a left-turn pocket at Alpine Road/Piers Lane/Alpine Access Road.
- Consolidation of access to Wildwood Lane at one driveway.
- Provision of a two-way left-turn lane between Bishop Lane and Stowe Lane.

The Alternative 4 delay and level of service results are provided in Table 5-7 and Table 5-8. Detailed queuing analysis results are provided in Appendix D.



# Alpine Road

## CORRIDOR STUDY PROJECT

Table 5-7: Alternative 4 Near-Term (2020) Intersection Delay and Level of Service Results

Study Intersection	No Improvements							Alternative 4						
	Control	AM Peak (7:30-8:30 AM)		MD Peak (3-4 PM)		PM Peak (5-6 PM)		Control	AM Peak		MD Peak		PM Peak	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Stowe / Alpine	SSSC	5.3	A	38.1	E	21.6	C	SSSC	9.4	A	5.7	A	6.6	A
Wildwood / Alpine	SSSC	36.6	E	34.5	D	>120	F	SSSC	14.3	B	7.3	A	3.6	A
Bishop / Alpine	SSSC	17.1	C	42.8	E	23.2	C	SSSC	17.5	C	7.3	A	8.5	A
Piers-Alpine Access / Alpine	SSSC	25.9	D	>120	F	>120	F	Signal	2.3	A	4.3	A	3.3	A
I-280 NB Ramps / Alpine	AWSC	17.2	C	52.3	F	38.9	E	Signal	32.3	C	17.9	B	14.2	B
I-280 SB Ramps / Alpine	SSSC	15.6	C	3.8	A	4.7	A	Signal	24.6	C	15.7	B	14.1	B
Golf-San Francisquito / Alpine	SSSC	23.7	C	13.9	B	14.0	B	SSSC	18.7	C	14.5	B	16.8	C
La Cuesta / Alpine	SSSC	16.3	C	13.8	B	14.6	B	Signal	8.0	A	7.9	A	8.6	A
La Mesa / Alpine	SSSC	13.6	B	10.1	B	10.8	B	Signal	8.5	A	7.8	A	7.5	A

Notes:

(a) SSSC = Side-street Stop-Control; AWSC = All-Way Stop-Control; Signal = Signalized

(b) Delay represents worst minor street approach movement for SSSC intersections. Delay represents average intersection delay for signalized intersections.



# Alpine Road CORRIDOR STUDY PROJECT

Table 5-8: Alternative 4 Long-Term (2040) Intersection Delay and Level of Service Results

Study Intersection	No Improvements							Alternative 4						
	Control	AM Peak (7:30-8:30 AM)		MD Peak (3-4 PM)		PM Peak (5-6 PM)		Control	AM Peak		MD Peak		PM Peak	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Stowe / Alpine	SSSC	9.9	A	41.0	E	22.2	C	SSSC	16.3	C	6.3	A	8.5	A
Wildwood / Alpine	SSSC	>120	F	39.7	E	>120	F	SSSC	16.9	C	7.9	A	3.9	A
Bishop / Alpine	SSSC	>120	F	44.1	E	23.9	C	SSSC	15.4	C	9.5	A	8.6	A
Piers-Alpine Access / Alpine	SSSC	42.4	E	>120	F	>120	F	Signal	2.1	A	6.5	A	4.2	A
I-280 NB Ramps / Alpine	AWSC	29.0	D	50.4	F	38.1	E	Signal	40.3	D	20.1	C	16.0	B
I-280 SB Ramps / Alpine	SSSC	51.2	F	4.0	A	5.0	A	Signal	35.3	D	19.0	B	17.0	B
Golf-San Francisquito / Alpine	SSSC	30.2	D	15.8	C	17.6	C	SSSC	15.6	C	18.7	C	23.4	C
La Cuesta / Alpine	SSSC	19.2	C	14.4	B	16.8	C	Signal	9.5	A	9.1	A	9.9	A
La Mesa / Alpine	SSSC	14.8	B	10.4	B	11.0	B	Signal	9.4	A	8.7	A	8.0	A

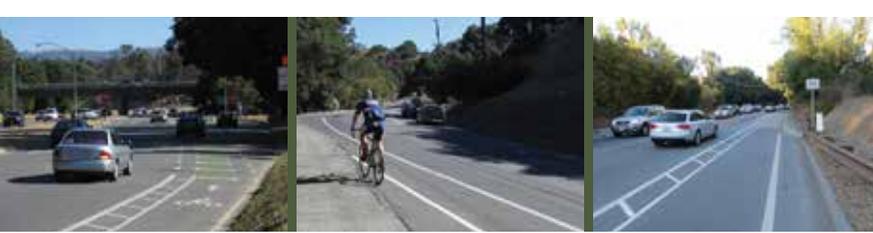
**Notes:**

(a) SSSC = Side-street Stop-Control; AWSC = All-Way Stop-Control; Signal = Signalized

(b) Delay represents worst minor street approach movement for SSSC intersections. Delay represents average intersection delay for signalized intersections.

As shown in the tables above, Alternative 4 results in significant improvements to delay and level of service throughout the corridor, particularly at the intersections at and north of the I-280 interchange. This is reflective of the fact that the installation of signals at the I-280 intersections would create gaps in traffic that better facilitate side-street access and reduce delay for cars turning on or off Alpine Road.

Table 5-9 shows the Alternative 4 travel time results in comparison to a no improvements alternative for the near-term and long-term scenarios. Alternative 4 results in major decreases in travel times, particularly in peak directions.



# Alpine Road

## CORRIDOR STUDY PROJECT

Table 5-9: Alternative 4 Corridor Travel Times

Direction	From	To	No Improvements			Alternative 4		
			AM Peak (7:30- 8:30)	Midday Peak (3-4 PM)	PM Peak (5-6 PM)	AM Peak	MD Peak	PM Peak
<b>Near-Term (2020)</b>								
Northbound	Portola Valley	Menlo Park	4.1	3.4	3.4	4.1	3.6	3.5
			-	-	-	-1%	4%	3%
Southbound	Menlo Park	Portola Valley	4.0	13.1	9.6	4.1	3.6	3.5
			-	-	-	3%	-73%	-63%
<b>Long-Term (2040)</b>								
Northbound	Portola Valley	Menlo Park	7.0	3.5	3.5	4.5	3.7	3.7
			-	-	-	-35%	6%	5%
Southbound	Menlo Park	Portola Valley	4.1	14.0	9.7	4.5	3.7	3.7
			-	-	-	10%	-74%	-62%

**Notes:**

Travel times represent the average travel time per vehicle driving between La Mesa Drive and Stowe Lane, inclusive, in the indicated peak hour.

All alternatives include signal coordination and modifications to signal timing parameters.

### Alternative 5

Improvements included in Alternative 5 that affect circulation metrics (discussed in greater detail in the preceding chapters) are:

- Installation of roundabouts at Alpine Road/La Mesa Drive, Alpine Road/La Cuesta Drive, Alpine Road/I-280 SB, and Alpine Road/I-280 NB.
- Extension of turn pockets at Alpine Road/Piers Lane/Alpine Access Road, Alpine Road/Bishop Lane, and Alpine Road/Stowe Lane.
- Extension of the acceleration lane at Alpine Road/Bishop Lane.
- Addition of a left-turn pocket at Alpine Road/Piers Lane/Alpine Access Road.
- Provision of a two-way left-turn lane between Bishop Lane and Stowe Lane.
- Consolidation of access to Wildwood Lane at one driveway.

The Alternative 5 delay and level of service results are provided in Table 5-10 and Table 5-11. Detailed queueing analysis results are provided in Appendix D.



# Alpine Road

## CORRIDOR STUDY PROJECT

Table 5-10: Alternative 5 Near-Term (2020) Intersection Delay and Level of Service Results

Study Intersection	No Improvements							Alternative 5						
	Control	AM Peak (7:30-8:30 AM)		MD Peak (3-4 PM)		PM Peak (5-6 PM)		Control	AM Peak		MD Peak		PM Peak	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Stowe / Alpine	SSSC	5.3	A	38.1	E	21.6	C	SSSC	10.3	B	5.2	A	6.9	A
Wildwood / Alpine	SSSC	36.6	E	34.5	D	>120	F	SSSC	21.2	C	7.6	A	3.5	A
Bishop / Alpine	SSSC	17.1	C	42.8	E	23.2	C	SSSC	20.6	C	7.1	A	7.5	A
Piers-Alpine Access / Alpine	SSSC	25.9	D	>120	F	>120	F	SSSC	9.8	A	14.5	B	20.6	C
I-280 NB Ramps / Alpine	AWSC	17.2	C	52.3	F	38.9	E	RAB	9.4	A	10.3	B	4.3	A
I-280 SB Ramps / Alpine	SSSC	15.6	C	3.8	A	4.7	A	RAB	4.7	A	1.8	A	1.9	A
Golf-San Francisquito / Alpine	SSSC	23.7	C	13.9	B	14.0	B	SSSC	27.4	D	16.8	C	17.3	C
La Cuesta / Alpine	SSSC	16.3	C	13.8	B	14.6	B	RAB	18.0	C	14.1	B	9.3	A
La Mesa / Alpine	SSSC	13.6	B	10.1	B	10.8	B	RAB	8.0	A	4.6	A	3.9	A

Notes:

- (a) SSSC = Side-street Stop-Control; AWSC = All-Way Stop-Control; Signal = Signalized; RAB = Roundabout
- (b) Delay represents worst minor street approach movement for SSSC intersections. Delay represents average intersection delay for signalized intersections.



# Alpine Road

## CORRIDOR STUDY PROJECT

Table 5-11: Alternative 5 Long-Term (2040) Intersection Delay and Level of Service Results

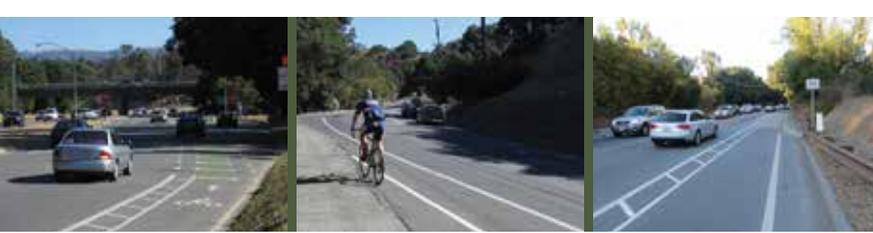
Study Intersection	No Improvements							Alternative 5						
	Control	AM Peak (7:30-8:30 AM)		MD Peak (3-4 PM)		PM Peak (5-6 PM)		Control	AM Peak		MD Peak		PM Peak	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Stowe / Alpine	SSSC	9.9	A	41.0	E	22.2	C	SSSC	21.0	C	5.2	A	6.1	A
Wildwood / Alpine	SSSC	>120	F	39.7	E	>120	F	SSSC	25.5	D	7.3	A	3.6	A
Bishop / Alpine	SSSC	>120	F	44.1	E	23.9	C	SSSC	25.8	D	9.1	A	11.8	B
Piers-Alpine Access / Alpine	SSSC	42.4	E	>120	F	>120	F	SSSC	16.0	C	38.4	E	24.4	C
I-280 NB Ramps / Alpine	AWSC	29.0	D	50.4	F	38.1	E	RAB	26.2	D	16.9	C	6.0	A
I-280 SB Ramps / Alpine	SSSC	51.2	F	4.0	A	5.0	A	RAB	29.8	D	2.7	A	2.3	A
Golf-San Francisquito / Alpine	SSSC	30.2	D	15.8	C	17.6	C	SSSC	>120	F	19.8	C	19.1	C
La Cuesta / Alpine	SSSC	19.2	C	14.4	B	16.8	C	RAB	21.6	C	23.3	C	13.8	B
La Mesa / Alpine	SSSC	14.8	B	10.4	B	11.0	B	RAB	9.5	A	6.0	A	4.6	A

**Notes:**

- (a) SSSC = Side-street Stop-Control; AWSC = All-Way Stop-Control; Signal = Signalized; RAB = Roundabout
- (b) Delay represents worst minor street approach movement for SSSC intersections. Delay represents average intersection delay for signalized intersections.

As shown in the tables above, Alternative 5 results in significant improvements to delay and level of service throughout the corridor, particularly at the intersections at and north of the I-280 interchange.

Table 5-12 shows the Alternative 5 travel time results in comparison to a no improvements alternative for the near-term and long-term scenarios. Alternative 5 results in major decreases in travel times, particularly in peak directions.



# Alpine Road

## CORRIDOR STUDY PROJECT

Table 5-12: Alternative 5 Corridor Travel Times

Direction	From	To	No Improvements			Alternative 4		
			AM Peak (7:30- 8:30)	Midday Peak (3-4 PM)	PM Peak (5-6 PM)	AM Peak	MD Peak	PM Peak
<b>Near-Term (2020)</b>								
Northbound	Portola Valley	Menlo Park	4.1	3.4	3.4	3.7	3.8	3.7
			-	-	-	-10%	10%	7%
Southbound	Menlo Park	Portola Valley	4.0	13.1	9.6	3.7	3.8	3.7
			-	-	-	-6%	-71%	-62%
<b>Long-Term (2040)</b>								
Northbound	Portola Valley	Menlo Park	7.0	3.5	3.5	4.5	4.0	3.8
			-	-	-	-35%	15%	9%
Southbound	Menlo Park	Portola Valley	4.1	14.0	9.7	4.5	4.0	3.8
			-	-	-	9%	-71%	-61%

**Notes:**

Travel times represent the average travel time per vehicle driving between La Mesa Drive and Stowe Lane, inclusive, in the indicated peak hour.

All alternatives include signal coordination and modifications to signal timing parameters.

## 5.2. Auto Safety and Access

All alternatives include a number of measures to enhance vehicular safety and improve corridor access. As the scale of the improvements increases, so does the magnitude of benefit.

### Alternative 1

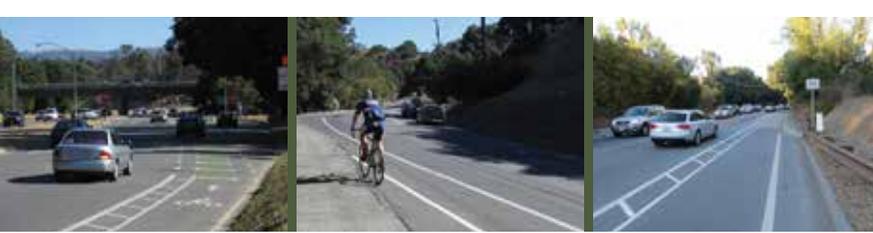
Alternative 1 achieves moderate benefits to vehicular safety through minor changes to the corridor. The reduction of speed limits and installation of speed feedback signs would have traffic calming effects and assist in improving vehicle safety.

Vehicular access to the corridor would be improved by the addition of a second turn lane on eastbound La Cuesta Drive and the extension of the right-turn lane at Alpine Road/Piers Lane/Alpine Access Road. The trimming of vegetation at Bishop Lane and Wildwood Lane and the relocation of the stop bar at Bishop Lane would improve the visibility for vehicles approaching Alpine Road from those side streets.

### Alternative 2

Alternative includes the benefits of Alternative 1 plus additional traffic and access benefits associated with the addition of signalized intersections. The addition of traffic signals at the I-280 interchange in particular would control vehicle conflicts at a location that has historically had a high number of broadside collisions.

Vehicular access to the corridor and the safety of turning movements on/off the corridor would be improved with the interchange improvements and by extending turn lanes in numerous locations and providing new turn lanes in others. The removal of vegetation at Bishop Lane and Wildwood Lane would improve the visibility for vehicles approaching Alpine Road from those side streets. Adding a two-way left-turn lane near Wildwood Lane would facilitate better access to the side street. The signalization of the two I-280 ramp intersections would create gaps in traffic that would enable vehicles downstream to access the corridor more easily.



# Alpine Road

## CORRIDOR STUDY PROJECT

### Alternative 3

Alternative 3 includes the benefits of Alternative 1 plus additional traffic and access benefits associated with the addition of roundabouts to the corridor. The addition of roundabouts at the I-280 interchange would provide a traffic calming effect and reduce the number of vehicle conflicts at a location that has historically had a high number of broadside collisions.

Vehicular access to the corridor would be improved by extending turn lanes in numerous locations and providing new turn lanes in others. The trimming of vegetation at Bishop Lane and Wildwood Lane would improve the visibility for vehicles approaching Alpine Road from those side streets. Adding a two-way left-turn lane near Wildwood Lane would facilitate better access to the side street. The provision of roundabouts at the I-280 intersections would reduce congestion and queuing, enabling better side-street access at intersections downstream. However, unlike the traffic signals in Alternative 2, there would be a more continuous flow of vehicles departing the interchange, resulting in fewer gaps for side-street access.

### Alternative 4

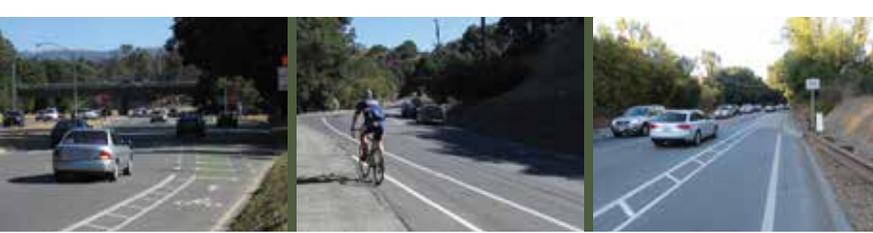
Alternative 4 includes the benefits of Alternative 2 plus additional safety and access benefits associated with more significant improvements included in this alternative. The addition of traffic signals at La Mesa Drive, La Cuesta Drive, and the I-280 interchange in particular would potentially decrease the likelihood of collisions, particularly at the I-280 interchange where there has historically been a high number of broadside collisions. The removal of free right-turns at I-280 and the removal of the existing southbound I-280 on-ramp from northbound Alpine Road would reduce speeds at the interchange and higher-speed merge movements.

Vehicular access to the corridor would be improved by extending turn lanes in numerous locations and providing new turn lanes in others. The trimming of vegetation at Bishop Lane and Wildwood Lane would improve the visibility for vehicles approaching Alpine Road from those side streets. Consolidating driveways and adding a two-way left-turn lane near Wildwood Lane would facilitate better access to and from the side street and improve sight distance. The signalization of the two I-280 ramp intersections would create gaps in traffic that would enable vehicles downstream to access the corridor more easily. Installing signals at La Mesa Drive and La Cuesta Drive would reduce delay for vehicles accessing the corridor from those side streets.

### Alternative 5

Alternative 5 includes the benefits of Alternative 3 plus additional safety and access benefits associated with more significant improvements included in this alternative. The addition of roundabouts at the I-280 interchange would provide a traffic calming effect and reduce vehicle conflict at a location that has historically had a high number of broadside collisions.

Vehicular access to the corridor would be improved by extending turn lanes in numerous locations and providing new turn lanes in others. The trimming of vegetation at Bishop Lane and Wildwood Lane would improve the visibility for vehicles approaching Alpine Road from those side streets. Consolidating driveways and adding a two-way left-turn lane near Wildwood Lane would facilitate better access to the side street and improve sight distance. The provision of roundabouts at the I-280 intersections would reduce congestion and queuing, enabling better side-street access at intersections downstream. Roundabouts at La Mesa Drive and La Cuesta Drive would reduce delay for vehicles accessing the corridor from those side streets.



# Alpine Road

## CORRIDOR STUDY PROJECT

### 5.3. Bicycle and Pedestrian Safety

All alternatives include a number of measures to enhance bicycle and pedestrian safety along the corridor. As the scale of improvements increases, so does the magnitude of benefit.

#### Alternative 1

Alternative 1 achieves moderate benefits for bicycle and pedestrian safety. The provision of dashed green striping in bicycle lane conflict areas alerts drivers and cyclists to the presence of shared traffic. Alternative 1 includes the provision of bike slots at Alpine Road/La Cuesta Drive and Alpine Road/Piers Lane/Alpine Access Road; these provide a designated space for bicycles to traverse these intersections and reduce the amount of conflict that commonly occurs between bicycles and vehicles in right-turn lanes. Extending the striped bicycle lane buffer north of the I-280 interchange will improve the comfort level for bicyclists along the corridor.

Pedestrians would benefit from the various pedestrian improvements in Alternative 1. The provision of RRFBs and pedestrian-level lighting at three locations would increase pedestrian visibility. The relocation of the crosswalk at the I-280 northbound off-ramp would make it easier for approaching vehicles to see crossing pedestrians. Improvements to the Alpine Road Trail path on the east side of the corridor would improve safety and comfort in locations where pedestrians currently must walk uncomfortably close to high-speed vehicle traffic. Alternative 1 would also close the gap between Stowe Lane and the existing entrance to the multi-use path north of Stowe Lane, eliminating the need for pedestrians to walk along the roadway shoulder to reach the multi-use path. This path extension would be located adjacent to Alpine Road, but some separation between the path and the roadway would be provided where feasible.

#### Alternative 2

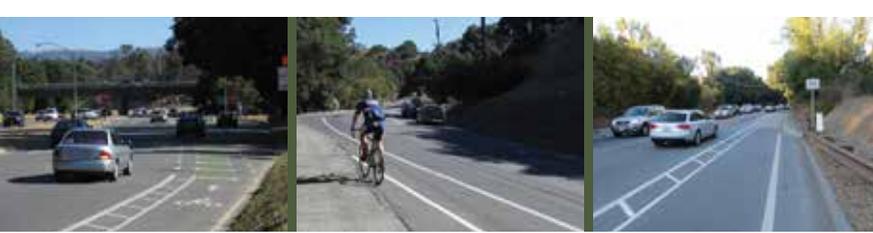
Alternative 2 achieves additional benefits for bicycle and pedestrian safety compared to Alternative 1. The signalization of Alpine Road/La Cuesta Drive would provide a safer pedestrian crossing at that intersection. Widening of the Alpine Road Trail path on the east side of the corridor would improve safety and comfort in locations where pedestrians currently must walk uncomfortably close to high-speed vehicle traffic.

Like Alternative 1, Alternative 2 would close the gap between Stowe Lane and the existing entrance to the multi-use path north of Stowe Lane; however, the path extension in Alternative 2 would be located directly adjacent to the roadway shoulder on Alpine Road. The elimination of roadside parking on the west side of the corridor near the Dish Trail entrance combined with the provision of a separated, paved parking lot would reduce conflict between parked cars and pedestrians or bicycles.

#### Alternative 3

Alternative 3 achieves additional benefits for bicycle and pedestrian safety relative to Alternative 1. However, the lack of a dedicated bicycle lane within the roundabouts provided in this alternative may make those intersections more difficult to navigate for some bicyclists. Bicyclists would have two options to traverse the proposed roundabouts. They could either navigate the roundabout like a vehicle or use the provided shared use path at the perimeter of the roundabout. Some cyclists believe that the current configuration may be more desirable despite the higher potential for collisions.

Pedestrians would benefit from the various pedestrian improvements in this alternative. The traffic calming effects of this alternative would improve overall safety for pedestrians. The installation of roundabouts at Alpine Road/La Cuesta Drive and at the I-280 intersections would reduce speeds at those intersections and thus make them safer for bicycles and pedestrians to navigate.



# Alpine Road

## CORRIDOR STUDY PROJECT

Alternative 3 would close the gap between Stowe Lane and the existing entrance to the multi-use path north of Stowe Lane; the path extension would be located directly adjacent to the roadway shoulder, as in Alternative 2. The elimination of roadside parking on the west side of the corridor near the Dish Trail entrance combined with the provision of a separated, paved parking lot would reduce conflict between parked cars and pedestrians or bicycles.

### Alternative 4

Alternative 4 achieves additional benefits for bicycle and pedestrian safety relative to Alternative 2. The traffic calming effects of this alternative would improve overall safety for pedestrians. The signalization of Alpine Road/La Cuesta Drive and Alpine Road/La Mesa Drive would provide safer, dedicated pedestrian crossings at those intersections. The elimination of the southbound I-280 on-ramp from northbound Alpine Road eliminates a conflict point between vehicles and bicycle/pedestrian traffic.

Like Alternative 1, Alternative 4 would close the gap between Stowe Lane and the existing entrance to the multi-use path north of Stowe Lane; however, the path extension in Alternative 4 would not be located adjacent to Alpine Road. Instead, the existing entrance to the multi-use path from Alpine Road would be closed, and a new 10-foot wide path would be constructed away from the roadway between the existing path and the northeast corner of Alpine Road/Stowe Lane.

### Alternative 5

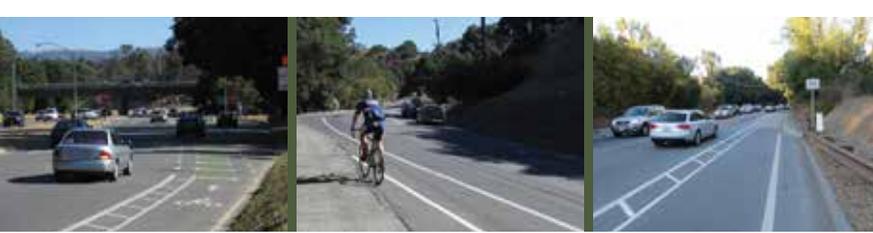
Alternative 5 achieves additional benefits for bicycle and pedestrian safety relative to Alternative 3. The traffic calming effects of this alternative would improve overall safety for pedestrians; the provision of an additional roundabout at La Mesa Drive would reduce speeds at that intersection and thus make it safer for bicycles and pedestrians to navigate. Like Alternative 3, Alternative 5 would close the gap between Stowe Lane and the existing entrance to the multi-use path north of Stowe Lane; however, the path extension would be constructed in the same manner as Alternative 4.

## 5.4. Alternatives Evaluation and Comparison

The five alternatives have varying magnitudes of improvements and effects on roadway conditions. Alternative 1 includes various minor improvements which provide vehicular, bicycle and pedestrian benefits at a relatively low cost. These improvements however would not solve the most significant corridor access and bicycle connectivity challenges in the corridor. Alternatives 2 through 5 generally include all the minor improvements in Alternative 1, but also include the installation of traffic signals or roundabouts and circulation changes.

Alternatives 2 and 4 both involve the installation of signals, while Alternatives 3 and 5 include the installation of roundabouts. Traffic analysis identified that the provision of either signals or roundabouts at the I-280 ramp intersections would significantly reduce delay at the other intersections along the corridor. The alternatives with signals were found to result in the highest reduction in delay and would have a greater capacity to handle high volumes of traffic; roundabouts would also significantly reduce delay, but would approach capacity in future scenarios. Roundabouts would result in slightly lower vehicle speeds in comparison to signals and reduced conflicts at intersections, benefitting vehicular movements on Alpine Road. Signals would create vehicle platoons with each signal cycle, and thus create gaps in traffic that would better facilitate side-street access to Alpine Road.

Alternatives 4 and 5 include intersection control improvements to Alpine Road/La Mesa Drive, while Alternatives 2 and 3 do not. The provision of a signal or roundabout at this location provides corridor access and vehicular, bicycle, and pedestrian safety benefits, but will be more challenging to implement due to right-of-way and other constraints.



# Alpine Road CORRIDOR STUDY PROJECT

Alternative 4 involves the installation of signals at Alpine Road/La Mesa Drive and Alpine Road/La Cuesta Drive, while Alternative 5 involves the installation of roundabouts at those same intersections. The traffic analysis of these alternatives found that both alternatives would result in acceptable levels of delay in the long-term scenario; delay would be slightly higher for a roundabout at Alpine Road/La Cuesta Drive compared to a signal, but would still be at an acceptable level in the long-term. Both alternatives would facilitate side-street access to Alpine Road. The roundabouts in Alternative 5 would provide a greater traffic calming effect while preserving the rural character of the neighborhood.

Alternatives 2 and 3 include the provision of a two-way left-turn lane in the area of Wildwood Lane, while Alternatives 4 and 5 both involve the consolidation of access to Wildwood Lane at one driveway in addition to the provision of a two-way left-turn lane. The two-way left-turn lane in Alternatives 2 through 5 would improve access to Alpine Road from Wildwood Lane; the consolidation of access to Wildwood Lane would further improve side-street access to Alpine Road by improving sight distance for drivers approaching Alpine Road and would improve safety by reducing the number of conflict points, but would come at a greater cost due to the right-of-way and utility relocation needed to construct it.

Alternatives 2 through 5 all include the extension of the multi-use path north of Stowe Lane; however, the path extension in Alternatives 2 and 3 is located directly adjacent to Alpine Road, whereas the path extension is located off-street in Alternatives 4 and 5. The path extension in Alternatives 4 and 5 would include the modifications of the entrance to the existing path located on Alpine Road approximately 350 feet north of Stowe Lane. The off-street path extension in Alternatives 4 and 5 would be further separated from vehicular traffic than in Alternatives 2 and 3.

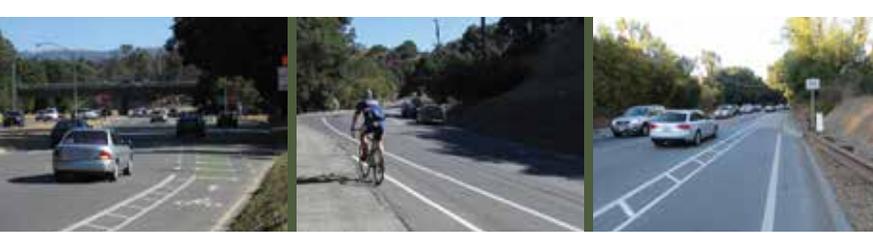
The removal of the free right-turn on-ramp from northbound Alpine Road to southbound I-280 in Alternative 4 would provide additional safety benefits relative to the preservation of this on-ramp in the other alternatives, as it would eliminate a conflict point between bicyclists and vehicles and would remove the need for a pedestrian path to pass underneath the ramp, as it currently does.

## 5.5. Public Meeting #2

The second community meeting was held on May 9th, 2016, from 7:00 to 8:30 PM at the Woodland School in Portola Valley. The purpose of the meeting was to present the five initial improvement alternatives and obtain feedback from the community on the individual improvements included in the alternatives. Approximately 65 community members attended this meeting. Attendees identified themselves primarily as local residents from the Town of Portola Valley, Ladera and Stanford Weekend Acres.



The meeting began with a presentation by the project team which reintroduced the attendees to the purpose of the project, reviewed previous community feedback, introduced the five improvement alternatives, and reviewed the individual improvements included in each alternative. During and after the presentation, many questions, suggestions, and opinions were offered to the project team; this input was recorded and documented in a meeting summary report. Following the presentation by the project team, the meeting attendees were directed to two interactive stations that had been set up. One station had video



# Alpine Road CORRIDOR STUDY PROJECT

monitors which showed videos of VISSIM traffic simulations of each improvement alternative. The second station had large maps showing the five alternatives; these maps had input boxes where attendees could vote on individual improvements using color-coded dots and provide written feedback directly on the map.

After attendees had a chance to visit individual stations, ask questions, and submit their comments, the group reconvened and the project team summarized the feedback received at the two stations. Comments from the meeting were transcribed and the feedback received to inform the next steps in the process.

Attendees expressed favorable opinions of the following individual improvements:

- Shifting of the crosswalk south of La Mesa Drive (Alternatives 1-5)
- Roundabout at La Mesa Drive (Alternative 5)
- Roundabout at La Cuesta Drive (Alternatives 3, 5)
- Roundabouts at I-280 Ramps (Alternatives 3, 5)
- General pedestrian path widening in Ladera area (Alternatives 1-5)
- Bike slots and buffered bike lanes (Alternatives 1-5)
- Shifting the stop bar at Bishop Lane (Alternatives 1-5)
- Consolidated driveway access at Wildwood Lane (Alternatives 4, 5)
- Multi-use path extension to Stowe Lane (Alternatives 2-5)

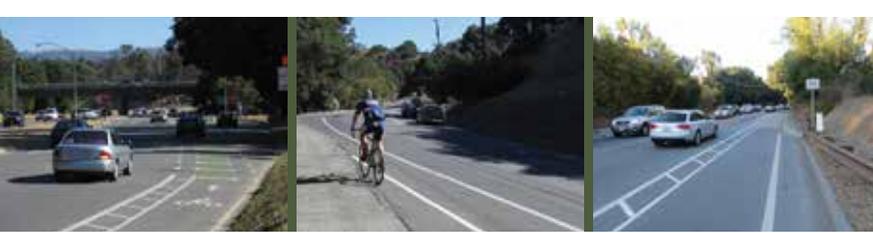
Attendees expressed unfavorable opinions of the following individual improvements:

- Signal at La Mesa Drive (Alternative 4)
- Signal at La Cuesta Drive (Alternatives 2, 4)
- Removal of the free southbound on-ramp from northbound Alpine Road (Alternative 4)
- Paved parking/path area on Bishop Lane (Alternatives 2-5)

Attendees had split opinions on the Dish Trail/Piers Lane parking lot modification included in Alternatives 2 through 5, with almost the same number of people indicating they liked that improvement as those that disliked it. Some attendees were concerned that formalizing the parking in this area would encourage more people to park there.

At the I-280 interchange, attendees were also conflicted about the installation of traffic signals. Some meeting attendees, as well as comments provided online after the meeting, expressed concerns about bicyclist safety at the I-280 ramp intersections if signals or roundabouts were installed and expressed a preference for the current stop-controlled intersection configuration. The removal of the free on-ramp from northbound Alpine Road to southbound I-280 received unfavorable responses, as attendees thought this would divert additional





# Alpine Road

## CORRIDOR STUDY PROJECT

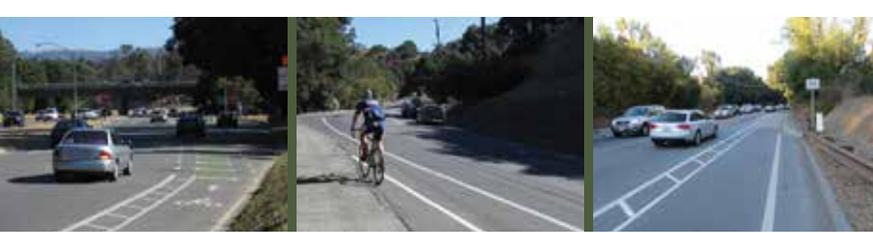
traffic into the Alpine Road/I-280 Southbound intersection and increase congestion.

Meeting attendees showed favorable opinions toward the minor improvements included in Alternative 1 which would not require any right-of-way or significant changes to the I-280 interchange.

Generally, meeting attendees showed favorable opinions toward roundabouts. In the online survey and e-mail comments that were received following the meeting, a number of community members indicated concerns about cyclists navigating the roundabouts, particularly the two-lane roundabouts at the I-280 ramps. These respondents did not like the idea of bicyclists navigating the roundabout without designated facilities or having to divert off the street to a shared bicycle/pedestrian facility. Numerous community members requested the striping of “Keep Clear” zones at intersections in the Stanford Weekend Acres area to better facilitate side-street access. Some community members also requested the consideration of a traffic signal at the Alpine Road/Alpine Access Road/Piers Lane intersection.

Attendees were asked to provide any additional feedback through an online follow-up survey or directly via e-mail. A total of 11 e-mails and 48 survey responses were received following the meeting. A meeting summary is included in **Appendix B**.

On June 10th, 2016, County of San Mateo staff met with community members in the field at the study corridor to walk along the corridor, discuss the proposed improvements, and gain additional feedback on improvements.



# Alpine Road CORRIDOR STUDY PROJECT

## 5.6. Alpine Access Road/Piers Lane Intersection Analysis

In response to the community request for a traffic signal at the Alpine Road/Alpine Access Road/Piers Lane intersection, the project team performed an analysis of modified versions of Alternatives 1 and 2, in which the Alpine Road/Alpine Access Road/Piers Lane intersection was converted to a signalized intersection. The delay and level of service results for the long-term (2040) scenario for modified Alternatives 1 and 2 with addition of the Alpine Road/Alpine Access Road/Piers Lane signal are shown in Table 5-13 and Table 5-14, respectively.

*Table 5-13: Traffic Analysis – Alternative 1 with Signal at Piers Lane/Alpine Access Road*

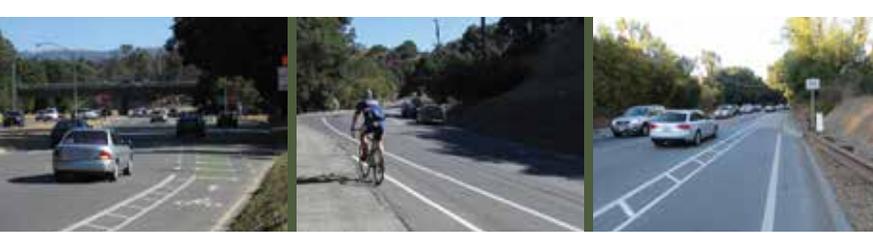
Study Intersection	Long-Term (2040) No Improvements							Long-Term (2040) Scenario With Signal at Piers Lane/Alpine Access Road						
	Control	AM Peak (7:30-8:30 AM)		MD Peak (3-4 PM)		PM Peak (5-6 PM)		Control	AM Peak		MD Peak		PM Peak	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Stowe / Alpine	SSSC	9.9	A	41.0	E	22.2	C	SSSC	9.8	A	>120	F	97.9	F
Wildwood / Alpine	SSSC	>120	F	39.7	E	>120	F	SSSC	>120	F	94.4	F	97.2	F
Bishop / Alpine	SSSC	>120	F	44.1	E	23.9	C	SSSC	>120	F	>120	F	>120	F
Piers-Alpine Access / Alpine	SSSC	42.4	E	>120	F	>120	F	Signal	13.5	B	77.3	E	56.9	E
I-280 NB Ramps / Alpine	AWSC	29.0	D	50.4	F	38.1	E	AWSC	53.8	F	60.4	F	85.0	F

Notes:

(a) SSSC = Side-street Stop-Control; AWSC = All-Way Stop-Control; Signal = Signalized

(b) Delay represents worst minor street approach movement for SSSC intersections. Delay represents average intersection delay for signalized intersections.

(c) Piers Lane/Alpine Access Road signal would not have a significant effect on operations of intersections south of the I-280 interchange.



# Alpine Road

## CORRIDOR STUDY PROJECT

Table 5-14: Traffic Analysis – Alternative 2 with Signal at Piers Lane/Alpine Access Road

Study Intersection	Long-Term (2040) No Improvements							Long-Term (2040) With Signal at Piers Lane/Alpine Access Road and Alternative 2 Improvements						
	Control	AM Peak (7:30-8:30 AM)		MD Peak (3-4 PM)		PM Peak (5-6 PM)		Control	AM Peak		MD Peak		PM Peak	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Stowe / Alpine	SSSC	9.9	A	41.0	E	22.2	C	SSSC	17.6	C	4.0	A	8.1	A
Wildwood / Alpine	SSSC	>120	F	39.7	E	>120	F	SSSC	15.4	C	11.0	B	23.0	C
Bishop / Alpine	SSSC	>120	F	44.1	E	23.9	C	SSSC	15.2	C	7.6	A	12.3	B
Piers-Alpine Access / Alpine	SSSC	42.4	E	>120	F	>120	F	Signal	2.6	A	8.7	A	13.2	B
I-280 NB Ramps / Alpine	AWSC	29.0	D	50.4	F	38.1	E	Signal	35.2	D	25.3	C	15.8	B
I-280 SB Ramps / Alpine	SSSC	51.2	F	4.0	A	5.0	A	Signal	33.6	C	36.1	D	42.9	D
Golf-San Francisquito / Alpine	SSSC	30.2	D	15.8	C	17.6	C	SSSC	29.7	D	20.4	C	13.2	B
La Cuesta / Alpine	SSSC	19.2	C	14.4	B	16.8	C	Signal	9.0	A	9.9	A	8.7	A
La Mesa / Alpine	SSSC	14.8	B	10.4	B	11.0	B	SSSC	15.3	C	13.7	B	12.4	B

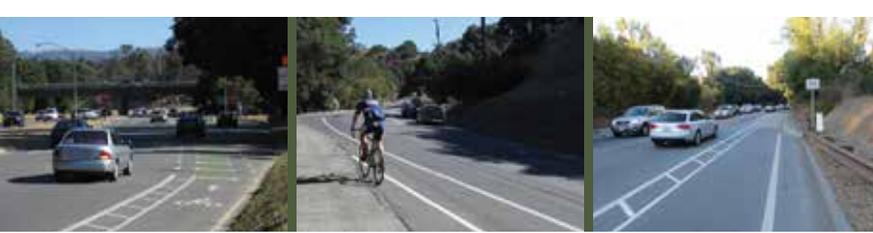
**Notes:**

(a) SSSC = Side-street Stop-Control; AWSC = All-Way Stop-Control; Signal = Signalized

(b) Delay represents worst minor street approach movement for SSSC intersections. Delay represents average intersection delay for signalized intersections.

As shown in the tables above, without the additional implementation of the I-280 interchange improvements (Alternative 2), the addition of a signal at Alpine Road/Alpine Access Road/Piers Lane would cause traffic conditions relative to the no improvements scenario to significantly deteriorate. The signal would exacerbate existing congestion on Alpine Road, increasing queuing and making it more difficult to access the roadway. However, the improvements achieved with the installation of a signal system at the I-280 interchange would not significantly be affected by an additional signal at Piers Lane.

The signal was suggested by the community in part to generate additional gaps in traffic on Alpine Road to assist in turning movements from side-streets in Stanford Weekend Acres. However, the volumes turning from Piers Lane that would stop northbound Alpine Road traffic, particularly in the AM period when northbound Alpine Road traffic is at its highest, are extremely low. Therefore, the signal would only be triggered on average once every 15-20 minutes in the morning peak period, resulting in negligible benefit to downstream intersections.



# Alpine Road

## CORRIDOR STUDY PROJECT

## 6. Recommended Solutions

After further evaluation of the five improvement concept alternatives and reviewing community feedback, the project team selected various individual improvements from the five proposed alternatives to develop one preferred concept alternative. Improvements were selected based on their ability to meet the project's objectives and based on community feedback. To guide the implementation of the preferred alternative, improvements were split into two phases. Phase 1 includes minor and lower-cost improvements that can be implemented in the near-term using funding sources anticipated to be available for roadway improvements. Phase 2 includes larger improvements that will need to be implemented long-term due to their higher cost, environmental requirements, or other pre-requisites such as requiring coordination with Caltrans. Additionally, a set of alternate improvements were developed for select locations in Phase 2 to allow for flexibility in implementing long-term improvements pending further design development and stakeholder coordination.

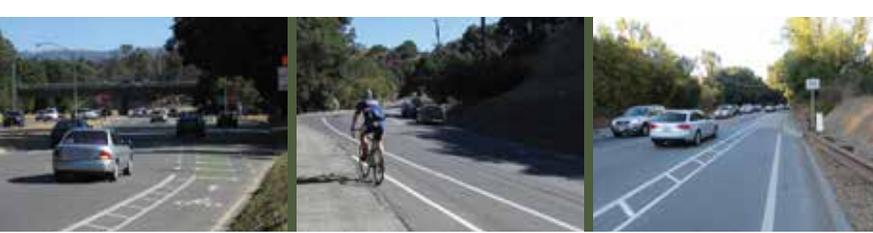
### 6.1. Preferred Alternative

#### Phase 1

The improvements included in Phase 1 are listed below in Table 6-2, which provides a description of benefits for each improvement and a relative cost rating (these ratings are defined in Table 6-1). These improvements are also illustrated in Figure 6-1.

*Table 6-1: Improvement Cost Ratings Scale*

Rating	Cost Range
\$	<\$30K
\$\$	\$30K-\$150K
\$\$\$	\$150K-\$1M
\$\$\$\$	\$1M-\$3M
\$\$\$\$\$	>\$3M

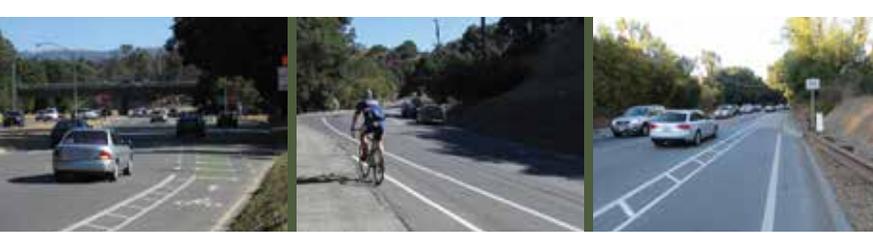


# Alpine Road

## CORRIDOR STUDY PROJECT

*Table 6-2: Phase 1 Preferred Improvements*

Improvement	Description	Benefits	Cost
<b>Ladera</b>			
Enhance/shift crosswalk south of La Mesa Drive	Relocate the existing crosswalk located just south of the Ladera Oaks Fitness Club driveway to the north side of the driveway, connecting to the shopping center driveway across the street. Install rapid rectangular flashing beacons (RRFBs) and lighting at the crosswalk and add pedestrian ramps.	Improves visibility of the crosswalk and increases safety for pedestrians.	\$\$
Install speed feedback signs in Ladera Area (2 locations)	Install 2 speed feedback signs (one in each direction) around the La Mesa Drive and La Cuesta Drive intersections.	Provides a traffic calming effect to improve safety by reducing vehicle speeds.	\$
Install pedestrian-level lighting and RRFBs at crosswalks at La Mesa Drive and at La Cuesta Drive	Install rapid rectangular flashing beacons (RRFBs) and lighting at the existing crosswalks at La Mesa Drive and La Cuesta Drive. RRFBs are pedestrian activated, so the lights only turn on when a pedestrian is present. Install pedestrian ramps where they do not exist.	Improves the visibility and safety of pedestrians crossing Alpine Road and upgrades the intersection to meet current Americans with Disabilities Act standards.	\$\$
General path widening (Ladera Area)	Widen off-street trail to a consistent 8' on the east side of Alpine Road between La Mesa Drive and the I-280 Interchange. Path would not be widened in areas constrained by San Francisquito Creek.	Provides more space for pedestrians and recreational cyclists.	\$\$
Bike slots at intersections and green paint in conflict areas (Ladera Area)	Modify striping to add a bike slot in three locations on southbound Alpine Road: La Mesa Drive, La Cuesta Drive, and the right-turn lane into Ladera Country Shopper. A bike slot is a striped bike lane between the through lanes and the right-turn lane provides a lane of travel for bicyclists. Stripe green paint in bike lanes in areas where bike lanes conflict with car traffic.	Increases visibility and safety of cyclists in locations where bicycle collisions typically occur.	\$\$
<b>I-280 Interchange</b>			
Bike lane buffer extension to Piers Lane	Extend the existing bike lane buffer (located at the I-280 Interchange) north to the Piers Lane intersection. The bike lane buffer provides a striped separation between the auto travel lane and the bike lane.	Improves bicyclist safety by increasing the distance between cars and bicycles.	\$
<b>Stanford Weekend Acres</b>			
Extend guardrail south of Bishop Lane	Extend the existing guardrail, or provide some other form of channelization, on the east side of Alpine Road south from its current end towards Piers Lane.	Enhance the visibility of the guardrail and provide further guidance to drivers to stay in the travelway	\$
Green bike lane striping (Stanford Weekend Acres Area)	Stripes green paint in bike lanes in areas where bike lanes conflict with car traffic.	Improves visibility of bike lanes and increases awareness of bicyclists for drivers.	\$
Keep Clear Zones at Piers Lane, Bishop Lane, Wildwood Lane, & Stowe Lane	Stripe "Keep Clear" zones on Alpine Road at the four intersections north of I-280.	May improve side-street access to Alpine Road.	\$
Install speed feedback signs in Stanford Weekend Acres Area (2 locations)	Install 2 speed feedback signs (one in each direction) on Alpine Road near Wildwood Lane.	Provides a traffic calming effect to improve safety by reducing vehicle speeds.	\$
Shift roadway to widen bike lane to 5' (striping change only)	Restripe roadway between just north of Stowe Lane and Wildwood Lane to allow for a consistent 5-foot wide bike lane on both sides of the road.	Allows for a 5-foot bike lane on southbound Alpine Road, improving safety and comfort for bicyclists.	\$\$



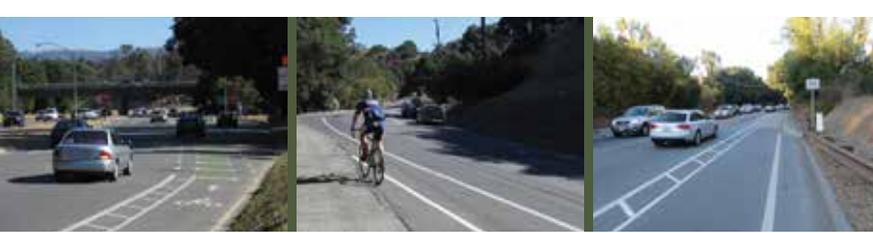
# Alpine Road

## CORRIDOR STUDY PROJECT

The improvements included in Phase 2 are listed below in Table 6-3, which provides a description of benefits for each improvement and a relative cost rating. These improvements are also illustrated in Figure 6-2.

*Table 6-3: Phase 2 Preferred Improvements*

Improvement	Description	Benefits	Cost
<b>Ladera</b>			
Roundabout at La Mesa Drive	Construct a single-lane roundabout at La Mesa Drive. Bike lanes would connect to mixed-use paths at the roundabouts. Relocate the Jeep Trail driveway to a location that does not conflict with the roundabout (impacts private property).	Improves side-street access to Alpine Road. Improves safety by decreasing vehicle speeds and potentially reducing crash severity.	\$\$\$\$
Close one right-out only Ladera Country Shopper access driveway	Close the right-out only driveway which exits the Ladera Country Shopper center to southbound Alpine Road just south of La Cuesta Drive (impacts private property).	Improves bicyclist safety by eliminating a conflict point with vehicle traffic and removes a limited sight distance conflict point.	\$
Bike lane buffer extension to La Cuesta Drive	Extend the existing bike lane buffers (located at the I-280 Interchange) south to the La Cuesta Drive intersection.	Improves bicyclist safety by increasing the amount of space between cars and bicycles.	\$\$\$
Roundabout at La Cuesta Drive	Construct a single-lane roundabout at La Cuesta Drive. Bike lanes would connect to mixed-use paths at the roundabouts.	Improves side-street access to Alpine Road. Improves safety by decreasing vehicle speeds and potentially reducing crash severity.	\$\$\$\$
Restrict gas station exit at La Cuesta Drive	Restrict the gas station exit driveway located at the corner of La Cuesta Drive and Alpine Road to fuel delivery trucks only (impacts private property).	Eliminates unsafe vehicle movements from gas station directly into intersection and reduces potential for wrong-way turns from Alpine Road to gas station.	\$
<b>I-280 Interchange</b>			
Signals at I-280 ramps	Install traffic signals at the I-280 northbound and southbound ramp intersections.	Creates vehicle platoons that create gaps in traffic downstream, enabling better side-street access to Alpine Road. Significantly increases capacity of intersections, reducing queues and congestion on Alpine Road to the north.	\$\$\$\$
Remove free southbound on-ramp from northbound Alpine Road	Eliminate the free right-turn on-ramp from northbound Alpine Road to southbound I-280. This ramp would be replaced by providing a left-turn lane from northbound Alpine Road to the loop ramp to southbound I-280.	Improves bicycle safety and comfort by eliminating a high-speed conflict with autos. Improves pedestrian safety and comfort by eliminating a non-standard and steep undercrossing of on-ramp. Improves vehicle safety by eliminating a non-standard on-ramp.	\$\$\$\$
Convert free right-turn at southbound off-ramp to stop control	Remove the free right-turn from the I-280 southbound off-ramp to southbound Alpine Road by bringing the right-turn lane to the intersection. Would be stop-controlled or signal-controlled (the latter only if signals were installed at I-280 ramps).	Eliminates high-speed bicycle and auto conflict point. May improve vehicle safety by improving sight distance and reducing vehicle speeds.	\$\$\$
Extend northbound on-ramp merge lane	Extend the merge lane on the northbound I-280 on-ramp.	Reduces sideswipe crash potential by providing a standard merge distance.	\$\$\$

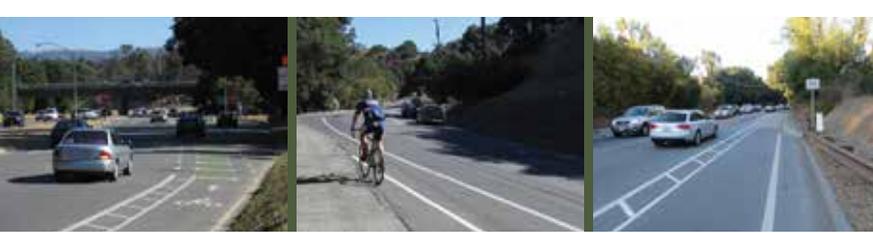


# Alpine Road

## CORRIDOR STUDY PROJECT

Improvement	Description	Benefits	Cost
Left-turn lanes and bike slot at Piers Lane	Provide a 150' southbound left-turn pocket at Piers Lane. Extend the existing northbound left-turn pocket by 50'. Extend the existing southbound right-turn pocket by 75'. Provide a 4' bike slot between the southbound right-turn pocket and the through lanes.	Facilitates better side-street access and improves safety on Alpine Road. Allows for greater deceleration distance within turn lane as opposed to within travel lane. Bike slot improves bicycle safety by providing a marked travelway for cyclists.	\$\$\$
<i>Stanford Weekend Acres</i>			
Extend acceleration lane and turn pockets at Stowe Lane and Bishop Lane	Lengthen the acceleration lanes and turn pockets on Alpine Road at Stowe Lane and Bishop Lane.	Facilitates better side-street access and improves safety on Alpine Road. Allows for greater deceleration distance within turn lane as opposed to within travel lane. Longer acceleration lane facilitates improved merging onto Alpine Road from side-streets.	\$\$\$
Consolidate driveway access at Wildwood Lane	Close the two existing Wildwood access points to Alpine Road and provide one access point to Wildwood Lane. Provide a 100' left turn lane on southbound Alpine Road. Provide a center turn lane on Alpine Road adjacent to Wildwood Lane and extending to Stowe Lane. Requires relocation of underground utilities and AT&T facilities.	Facilitates better side-street access by consolidating entrance to Wildwood Lane at one location. Center turn lane allows for vehicles entering Alpine Road from both Wildwood Lane and Stowe Lane to make two-stage left turns, reducing delays and improving safety. Allows vehicles turning to Wildwood Lane to decelerate outside of the through lane. Greatly improves existing sight distance constraints at Wildwood Lane intersections.	\$\$\$\$
Improve northbound bus stop at Stowe Lane	Stripe a designated pullout area for buses to pull over on northbound Alpine Road, just north of Stowe Lane, outside of the flow of traffic. Provide shelter and paved waiting area for waiting passengers.	Decreases delay resulting from buses stopping on northbound Alpine Road and may reduce unsafe driver behavior. Improves transit rider waiting experience and comfort.	\$\$
On-Street Path Extension to Stowe Lane	Provide an extension to the multi-use path which currently terminates approximately 350' north of Stowe Lane. The path would be located adjacent to Alpine Road and extend to the Stowe Lane intersection.	Improves bicyclist and pedestrian safety and connectivity by closing the gap to the existing off-street path adjacent to the golf course. Would reduce unsafe bicycle movements across Alpine Road and wrong-way bicyclist movements along Alpine Road.	\$\$\$

Improvements are also under consideration at the Dish Trail parking area at Piers Lane. However, there appears to be limited right-of-way in the public domain to formalize parking in this area. Thus, further consideration of Dish Trail parking will require coordination with Stanford University and an engineering survey to identify the available public right-of-way, if any, for designated parking areas.



# Alpine Road

## CORRIDOR STUDY PROJECT

### Phase 2 Alternate Improvements

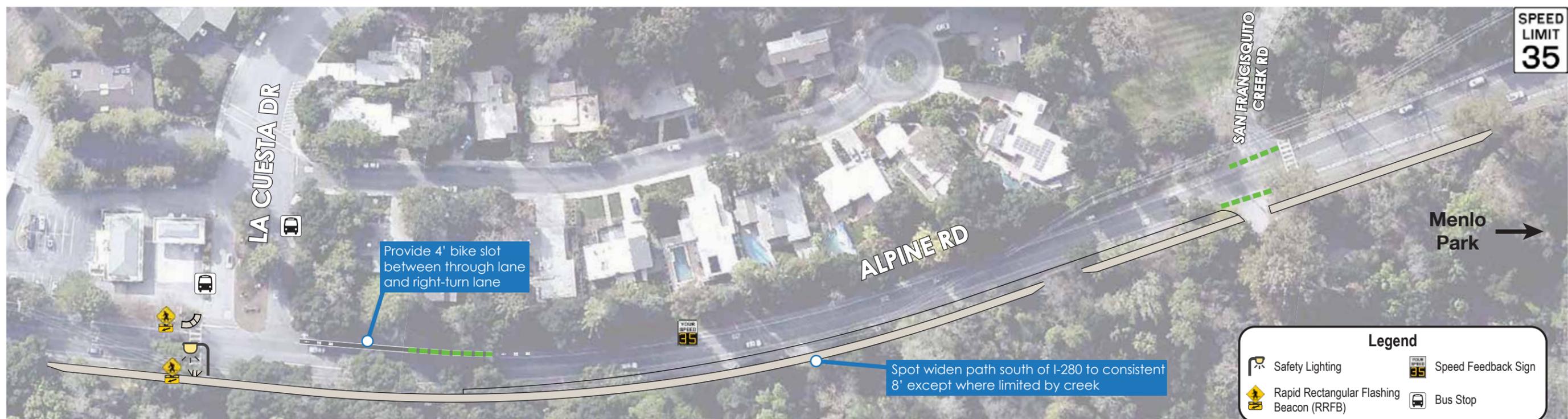
The improvements listed below in Table 6-4 are alternate improvements which would replace some of the improvements listed above under Phase 2. Based on public input received and technical analysis performed as part of this project, these improvements may be less beneficial and desirable than the alternatives identified in Table 6-4. However, they may be further evaluated during a subsequent phase of this project. These alternate improvements are also illustrated in Figure 6-3.

*Table 6-4: Phase 2 Alternate Improvements*

Improvement	Description	Benefits	Cost
Add turn lanes on La Cuesta Drive	Instead of constructing a roundabout at La Cuesta Drive, leave the intersection control as is (stop sign on La Cuesta Drive). Modify median to widen eastbound La Cuesta Drive to provide dedicated left-turn and right-turn lanes (widening would not impact trees or the existing monument sign in the median). Would not be feasible with a roundabout at La Cuesta Drive.	Facilitates better access to Alpine Road from La Cuesta Drive. In combination with Improvement E may also reduce wrong-way turns from Alpine Road to gas station.	\$\$
Roundabouts at I-280 Ramps	Instead of signals at I-280 ramps, construct two-lane roundabouts at the I-280 northbound and southbound ramp intersections. Would preclude Improvement G. Bike lanes would connect to mixed-use paths at the roundabouts.	Increases capacity of intersections, reducing queues and congestion on Alpine Road to the north. Not as effective at reducing congestion as signalization, but improves safety at interchange by decreasing vehicle speeds and decreasing crash frequency	\$\$\$\$
Two-way left-turn lane median at Wildwood Lane	Instead of providing consolidated access to Wildwood Lane, leave the two existing Wildwood Lane access points as is. A center turn lane would still be provided to enable side-street access.	Allows for two-stage left-turns from Wildwood Lane to Alpine Road and deceleration outside of the through lane for turns to Wildwood Lane. However, does not improve existing sight distance constraints.	\$\$\$\$

# Alpine Road

## CORRIDOR STUDY PROJECT



# Alpine Road

## CORRIDOR STUDY PROJECT



Legend	
	Safety Lighting
	Rapid Rectangular Flashing Beacon (RRFB)
	Speed Feedback Sign
	Bus Stop

# Alpine Road

## CORRIDOR STUDY PROJECT



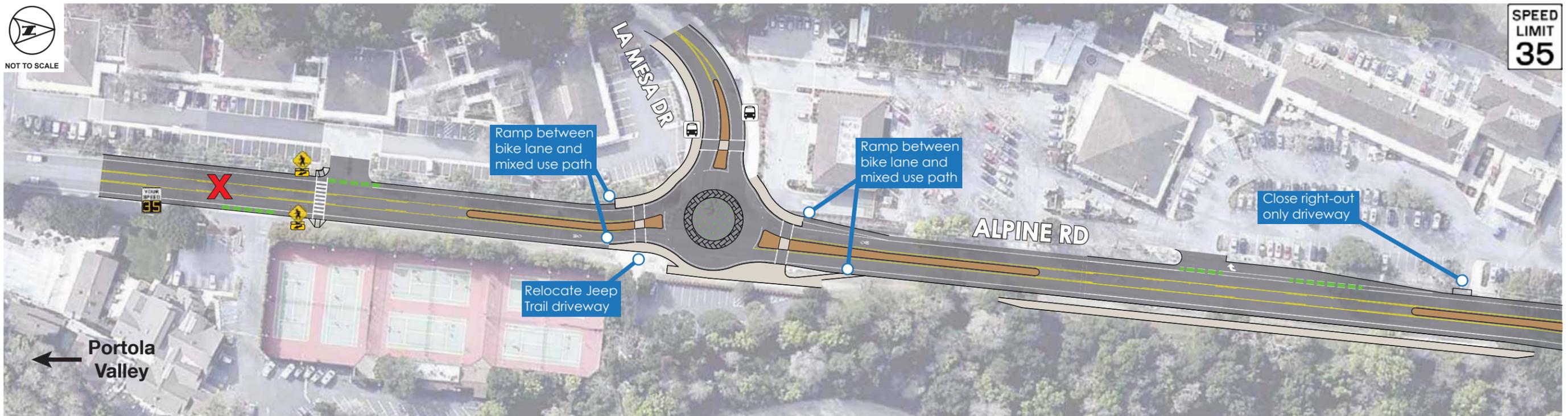
**Legend**

	Safety Lighting		Speed Feedback Sign
	Rapid Rectangular Flashing Beacon (RRFB)		Bus Stop



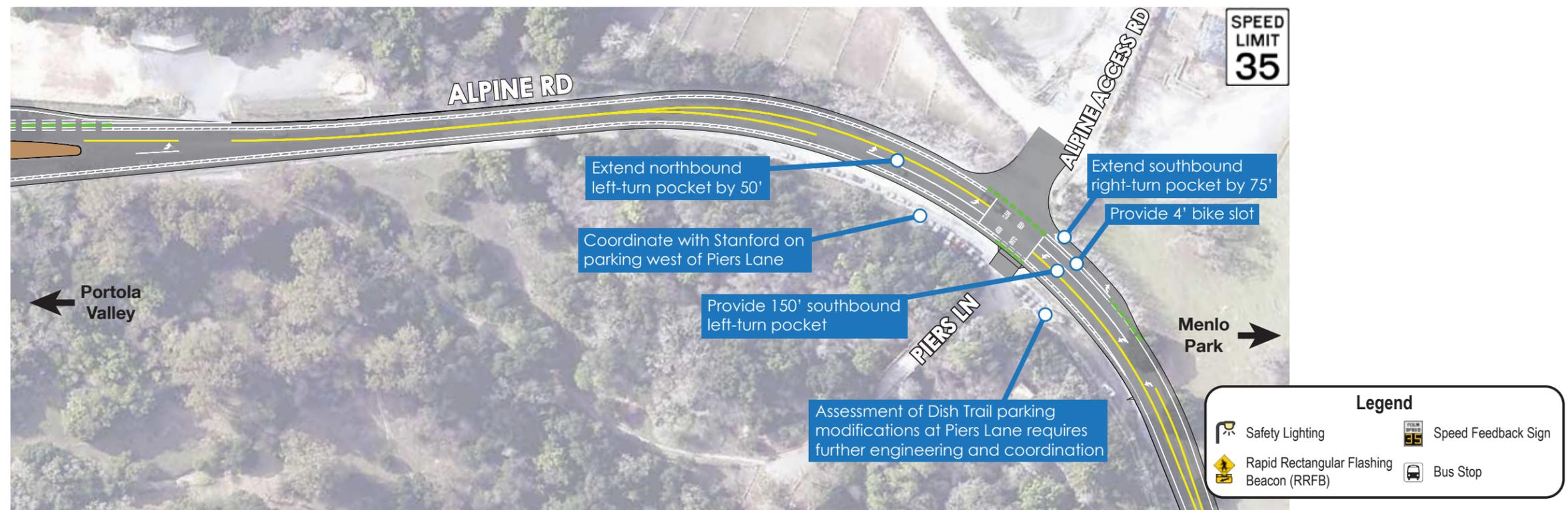
# Alpine Road

## CORRIDOR STUDY PROJECT



# Alpine Road

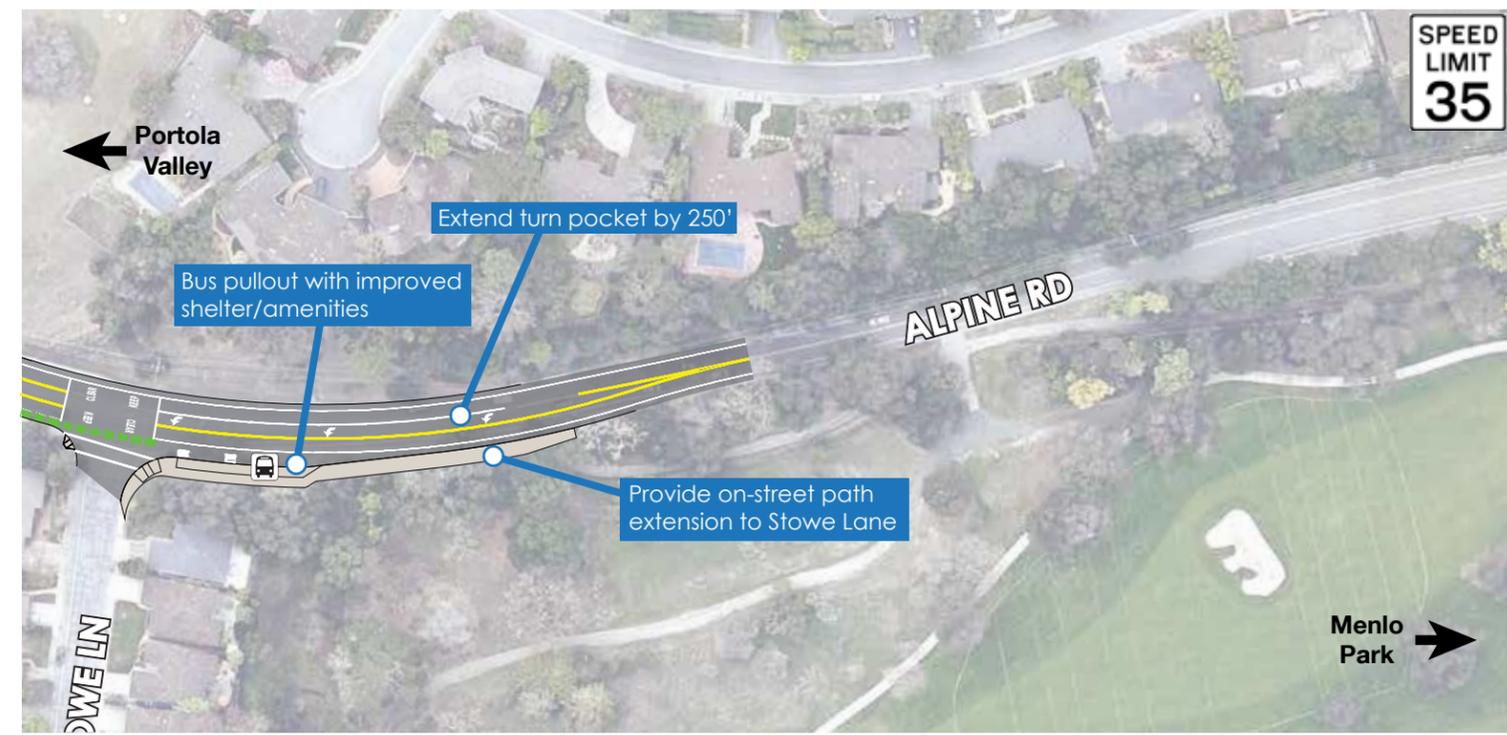
## CORRIDOR STUDY PROJECT



Legend	
	Safety Lighting
	Rapid Rectangular Flashing Beacon (RRFB)
	Speed Feedback Sign
	Bus Stop

# Alpine Road

## CORRIDOR STUDY PROJECT



Legend	
	Safety Lighting
	Rapid Rectangular Flashing Beacon (RRFB)
	Speed Feedback Sign
	Bus Stop



# Alpine Road

## CORRIDOR STUDY PROJECT



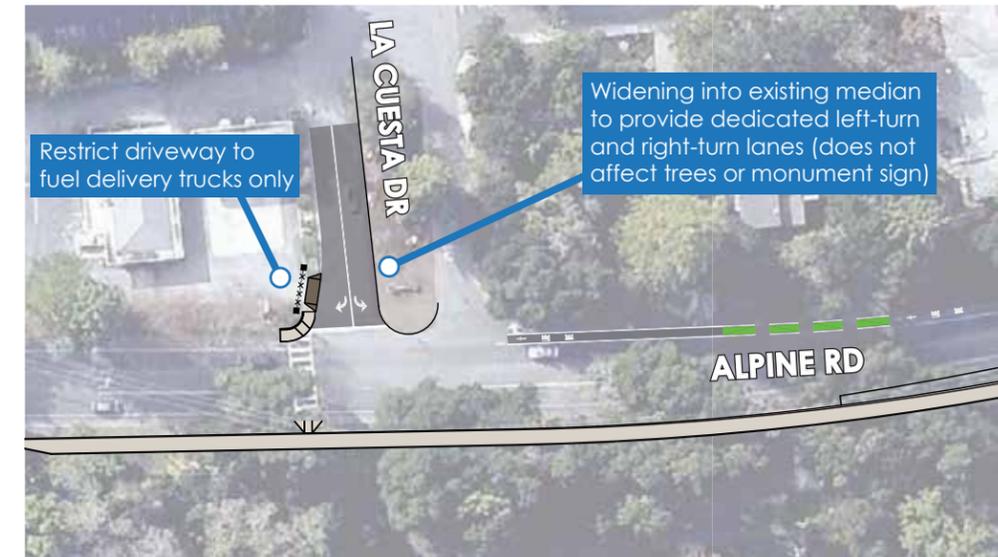
Center Turn Lane at Wildwood Lane (No Consolidated Driveway Access)



NOT TO SCALE

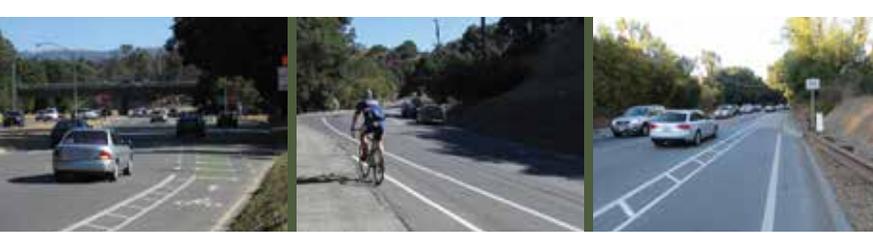


Add Turn Lanes on La Cuesta



Roundabouts at I-280 Ramps





# Alpine Road

## CORRIDOR STUDY PROJECT

### 6.2. Benefits of Preferred Alternative

#### Vehicular

The provision of signals at the I-280 ramp intersections and roundabouts at Alpine Road/La Cuesta Drive and Alpine Road/La Mesa Drive would reduce delay and improve level of service performance along the entire study corridor. In particular, the signals at the I-280 ramp intersections would significantly reduce queuing and congestion on Alpine Road. The addition or extension of turn lanes at intersections throughout the corridor would also improve delay and reduce queuing at multiple study intersections.

#### Vehicular Safety and Access

The provision of signals at the I-280 ramp intersections would potentially decrease the likelihood of collisions, particularly at the I-280 interchange where there has historically been a high number of broadside collisions. The provision of roundabouts at intersections (La Mesa and La Cuesta) where north-south movements are currently unrestricted would have a traffic calming effect in those areas. Additional traffic calming measures, including the reduction of speed limits and speed feedback signs, may reduce speeds and thus benefit vehicular safety.

Vehicular access to the corridor would be improved by extending turn lanes in numerous locations and providing new turn lanes in others. Adding a two-way left-turn lane and consolidating access to Wildwood Lane at one driveway would also facilitate better access to the side street and improve sight distance. These improvements would also provide benefits to vehicular safety by allowing vehicles to accelerate and decelerate out of the main flow of traffic, reducing a common cause of rear-end collisions. Providing a turning refuge may also result in safer turning maneuvers, potentially reducing the likelihood of broadside collisions.

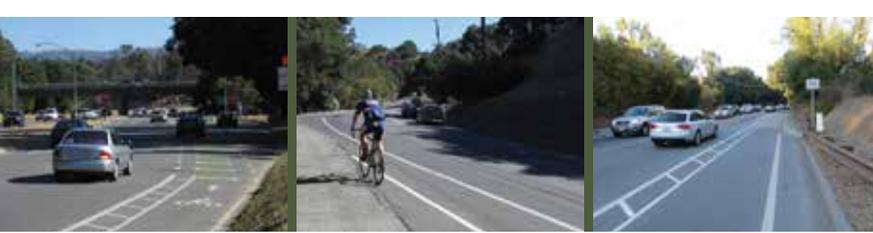
The signalization of the two I-280 ramp intersections would create gaps in traffic that would enable vehicles at Piers Lane, Bishop Lane, Wildwood Lane, and Stowe Lane to more easily access the corridor. Installing roundabouts at La Mesa Drive and La Cuesta Drive would reduce delay for vehicles accessing the corridor from those side streets while also reducing vehicle speeds and reducing the number of conflict points at those intersections. Striping “Keep Clear” zones at the four intersections north of I-280 may improve side-street access to Alpine Road by creating a gap in queues on Alpine Road.

Restricting the gas station driveway at Alpine Road/La Cuesta Drive to fuel delivery trucks only will improve vehicular safety by eliminating a conflict point located close to the Alpine Road/La Cuesta Drive intersection.

#### Bicycle/Pedestrian

The traffic calming effects of the project improvements would improve overall safety for pedestrians. In particular, the reduced speed limit, roundabouts, and speed feedback signs would contribute to reduced vehicular speeds. The removal of free right-turns at the I-280 interchange would benefit bike safety by reducing speeds and eliminating high-speed conflict points between bicycles and vehicles. The elimination of the on-ramp from northbound Alpine Road to southbound I-280 would allow the Alpine Road Trail to follow the road alignment and eliminate the ADA-noncompliant underpass of the trail beneath the existing on-ramp. It would also eliminate a high-speed conflict between vehicles and bicycles. The project improvements would eliminate all pedestrian/vehicle conflict areas along the Alpine Road Trail between La Cuesta Drive and the I-280 northbound ramps.

Restriping of the roadway near Stowe Lane would allow for a consistent 5-foot wide bike lane on both sides of the road and eliminate the pinch point in the existing bike lane. The elimination of roadside parking on the west side of the corridor near the Dish Trail entrance would reduce infringement of parked cars into the pedestrian and bicycle realm.



# Alpine Road

## CORRIDOR STUDY PROJECT

New RRFBs and pedestrian lighting at crosswalks in the Ladera Area may increase pedestrian visibility and dramatically increase the rate of vehicle yielding. Widening of the Alpine Road Trail on the east side of the corridor in Ladera would improve safety and comfort in locations where pedestrians are adjacent to vehicle traffic. Extension of the multi-use path near Stowe Lane would improve pedestrian connectivity by closing the gap to the existing off-street path adjacent to the golf course.

The provision of dashed green striping in bicycle lane conflict areas alerts drivers and cyclists to the presence of shared traffic. The provision of bike slots at various intersections creates a designated space for bicycles to traverse those intersections and reduce the amount of conflict that commonly occurs between bicycles and vehicles in right-turn lanes. Extension of the striped bicycle lane buffer would improve the comfort level of bicyclists by providing physical separation between bicycles and cars. These striping improvements will collectively serve to enhance the comfort and may improve the safety of cyclists along Alpine Road.

### Transit

The project improvements which improve vehicular safety and reduce vehicle congestion provide the same benefit to transit vehicles that utilize the corridor. Improvements to the northbound bus stop at Stowe Lane will improve comfort and access for transit riders. Bicycle and pedestrian improvements will enhance first-mile/last-mile connections to transit.

## 6.3. Conceptual Engineering

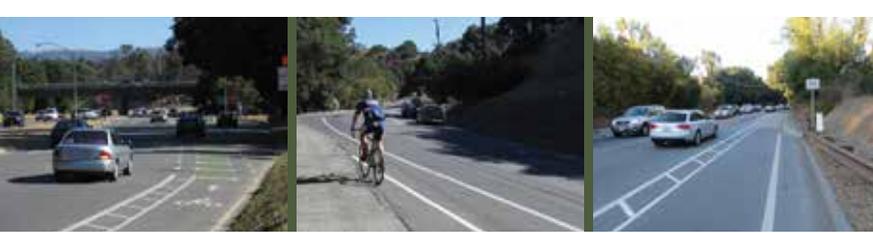
### Design Assumptions

Improvement design has been completed at a conceptual level and will likely undergo refinement through preliminary engineering and final design. The goal of the design work included as part of this project was to evaluate feasibility, gain an understanding of right-of-way needs and effects on adjacent parcels, and estimate cost. A set of engineering concepts was developed for the initial set of five improvement concept alternatives and both phases of the final preferred alternative. These concepts are provided in Appendix C and Appendix E, respectively.

The Caltrans Highway Design Manual was used as a basis of design. The proposed concepts assume a minimum vehicle lane width of 11 feet to reduce the overall geometric cross section and necessary right-of-way acquisition. The concepts assume a minimum bicycle lane width of five feet, not including a striped buffer. Horizontal curve radii were based on design speed and did not account for superelevation, as no vertical information was known about the existing roadway. Right-of-way limits were determined utilizing GIS shapefiles provided by the County of San Mateo; the actual right-of-way limits will likely differ from those shown in concept drawings.

### Cost Estimates

The engineering concepts developed for the preferred alternative were used to develop opinions of probable cost for the improvements they included. These cost estimates are summarized in Table 6-5. The total cost of Phase 1 improvements is estimated to range from \$364,000 to \$494,000 while Phase 2 improvements are anticipated to collectively cost between \$11,585,000 and \$15,675,000. Among the Phase 2 alternate improvements, the alternates which do not include the roundabout at La Cuesta or the consolidated driveway access at Wildwood Lane would be less expensive than the preferred improvements while the installation of roundabouts at the I-280 ramps would be significantly more expensive than the installation of signals at those locations. Detailed breakdowns of opinions of probable cost are provided in Appendix F.

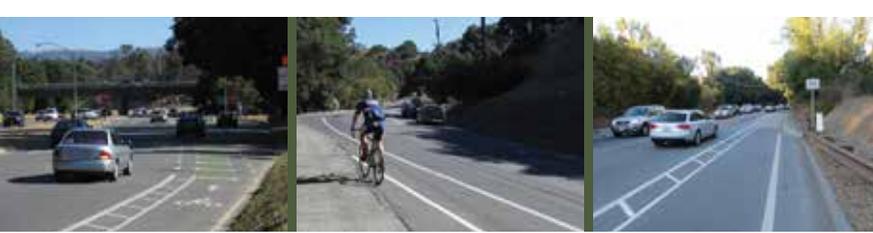


# Alpine Road

## CORRIDOR STUDY PROJECT

Table 6-5: Preferred Alternative Opinion of Probable Cost – 2016 Figures

Improvement Type	Phase 1		Phase 2		Alternative Phase 2	
	Low End	High End	Low End	High End	Low End	High End
<b>Segment 1: LADERA</b>						
Roundabout at La Cuesta Dr	-	-	\$1,871,000	\$2,532,000	-	-
General path widening	\$110,000	\$149,000	-	-	-	-
Roundabout at La Mesa Dr	-	-	\$1,880,000	\$2,543,000	-	-
Enhance/Shift crosswalk s/o La Mesa Dr	\$78,000	\$106,000	-	-	-	-
Restrict gas station exit at La Cuesta	-	-	\$9,000	\$12,000	-	-
Bike slots & Buffered bike lanes	\$30,000	\$40,000	\$705,000	\$954,000	-	-
Narrowing median to provide turn lanes at La Cuesta Dr	-	-	-	-	\$115,000	\$155,000
Restrict shopping center driveway access	-	-	\$4,000	\$6,000	-	-
Install lighting and RRFBs at crosswalks at La Mesa and La Cuesta	\$54,000	\$74,000	-	-	-	-
Install speed feedback signs	\$9,000	\$12,000	-	-	-	-
<b>Estimated Segment 1 Cost Ranges</b>	<b>\$281,000</b>	<b>\$381,000</b>	<b>\$4,469,000</b>	<b>\$6,047,000</b>		
<b>Segment 2: I-280 to PIERS LANE</b>						
Roundabouts at I-280 ramps	-	-	-	-	\$8,376,000	\$11,332,000
Left turn lanes and bike slot at Piers Lane/Alpine Access Road			\$231,000	\$313,000		
Signals at I-280 ramps (includes square-up free-rights)	-	-	\$1,153,000	\$1,560,000	-	-
Remove free SB on-ramp from NB Alpine Rd	-	-	\$1,500,000	\$2,029,000	-	-
Bike lane buffer extensions	\$19,000	\$26,000	-	-	-	-
Remove free-right turn at SB off-ramp			\$332,000	\$449,000		
Extend NB ramp merge (Ramp widening/lengthening only)	-	-	\$704,000	\$952,000	-	-
<b>Estimated Segment 2 Cost Ranges</b>	<b>\$19,000</b>	<b>\$26,000</b>	<b>\$3,920,000</b>	<b>\$5,303,000</b>		
<b>Segment 3: STANFORD WEEKEND ACRES</b>						
Consolidated driveway access at Wildwood Ln	-	-	\$1,492,000	\$2,019,000	-	-
On-Street Path Extension to Stowe Ln	-	-	\$486,000	\$658,000	-	-
Two-way left-turn lane at Wildwood Ln	-	-	-	-	\$1,277,000	\$1,727,000
Extend acceleration lanes and/or turn pockets	-	-	\$469,000	\$634,000	-	-
Improve northbound bus pullout and stop	-	-	\$109,000	\$148,000	-	-
Shift roadway to widen bike lane to 5 feet (restriping only)	\$26,000	\$35,000	-	-	-	-
Extend guardrail or other channelizers south of Bishop Ln	\$21,000	\$29,000	-	-	-	-
Install speed feedback signs	\$9,000	\$12,000	-	-	-	-
Keep Clear Zone on Alpine at Piers Ln	\$2,000	\$4,000				



# Alpine Road CORRIDOR STUDY PROJECT

Improvement Type	Phase 1		Phase 2		Alternative Phase 2	
	Low End	High End	Low End	High End	Low End	High End
Keep Clear Zone on Alpine at Wildwood Ln	\$2,000	\$4,000				
Keep Clear Zone on Alpine at Bishop Ln	\$2,000	\$4,000				
Keep Clear Zone on Alpine at Stowe Ln	\$2,000	\$4,000				
Green Bike Lane Striping (miscellaneous locations)	\$20,000	\$30,000				
<b>Estimated Segment 3 Cost Ranges</b>	<b>\$56,000</b>	<b>\$76,000</b>	<b>\$2,556,000</b>	<b>\$3,459,000</b>		
	Phase 1		Phase 2			
Estimated Total Phase Cost Range	\$356,000	\$483,000	\$10,945,000	\$14,809,000		

### Implementation and Risk Factors

Given their relatively small scale and cost, the Phase 1 improvements may be implemented as funding is allocated for them. Minor signage and striping changes could be implemented quickly.

The implementation of Phase 2 improvements will require further development of engineering designs, particularly for the intersections being converted to signals or roundabouts. Additionally, because of the high cost of some Phase 2 improvements, the County of San Mateo will likely need to pursue future grant funding opportunities. Any improvements made at the I-280 interchange would require coordination and approval from Caltrans. An intersection control evaluation (ICE) study will be required to assess the optimal control at the ramp intersections and will include an analysis of at least both signalization and roundabout alternatives.

The consolidation of driveway access to Wildwood Lane will require coordination with AT&T to relocate its utility box, which is located within the right-of-way needed for the consolidated driveway.

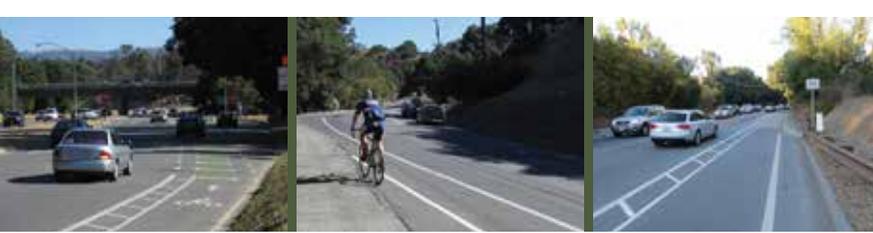
Detailed environmental review may be required for the implementation of some intersection improvements. Environmental review will necessitate further public outreach and opportunities for community input. Detailed environmental review may not be necessary for minor improvements focused on bicycle and vehicle safety.

Implementation challenges are discussed in further detail in the cost estimate technical memo in **Appendix G**.

### 6.4. Public Meeting #3 and Project Prioritization

The third community meeting was held on November 1st, 2016, from 7:00 to 11:00 PM at the Woodland School in Portola Valley. The purpose of the meeting was to present the refined list of improvements developed for the preferred alternative and to receive feedback from the community on which improvements should be prioritized for implementation. Over 80 community members attended this meeting.

The meeting began with a presentation by the project team which reintroduced the attendees to the purpose of the project, reviewed previous community feedback, introduced the Phase 1 and Phase 2 improvements, and reviewed the individual improvements included in each alternative. Also discussed were specific improvements suggested by some community members but not deemed feasible to be considered for implementation at this time. During and after the presentation, many questions, suggestions, and opinions were offered to the project team; this input was recorded and documented in a meeting summary report. A breakout session followed the presentation by the project team. Attendees formed groups of up to ten people and were asked to provide a ranking for the list of improvements in Phase 1 and Phase 2. This exercise allowed attendees to indicate which improvements they felt should receive the highest priority for funding and implementation; it also allowed attendees to indicate if they preferred one of the Phase 2 alternate improvements.



# Alpine Road CORRIDOR STUDY PROJECT

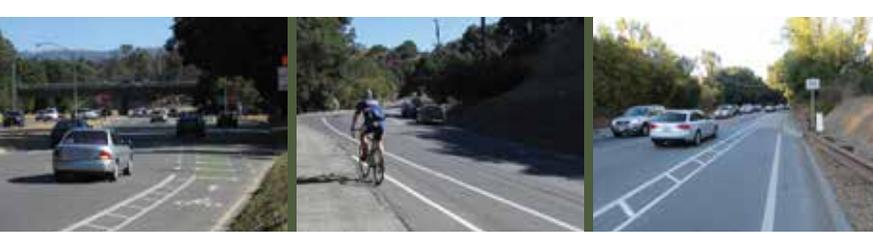
At the end of the breakout session, representatives from each group reported their priority rankings. The results boards from that session are shown in Figure 6-4 for Phase 1 and in Figure 6-5 for Phase 2.

Based on community responses, the rankings of improvements for Phase 1 and Phase 2 are listed in Table 6-6 and Table 6-7, respectively. Improvements have been sorted into tiers to indicate the general preferences of the community that were expressed at the meeting.

**Table 6-6: Prioritization of Phase 1 Improvements**

Improvement	Description
<b>Tier 1</b>	
Reduce speed limit	Reduce the speed limit along the entire study corridor to 35 miles per hour.
Keep Clear Zones at Piers Lane, Bishop Lane, Wildwood Lane, & Stowe Lane	Stripe "Keep Clear" zones on Alpine Road at the four intersections north of I-280.
Install pedestrian-level lighting and RRFBs at crosswalks at La Mesa Drive and at La Cuesta Drive	Install rapid rectangular flashing beacons (RRFBs) and lighting at the existing crosswalks at La Mesa Drive and La Cuesta Drive. RRFBs are pedestrian activated, so the lights only turn on when a pedestrian is present. Install pedestrian ramps where they do not exist.
Install speed feedback signs in Stanford Weekend Acres Area (2 locations)	Install 2 speed feedback signs (one in each direction) on Alpine Road near Wildwood Lane.
Install speed feedback signs in Ladera Area (2 locations)	Install 2 speed feedback signs (one in each direction) around the La Mesa Drive and La Cuesta Drive intersections.
<b>Tier 2</b>	
Shift roadway to widen bike lane to 5' (striping change only)	Restripe roadway between just north of Stowe Lane and Wildwood Lane to allow for a consistent 5-foot wide bike lane on both sides of the road.
Green bike lane striping (Stanford Weekend Acres Area)	Stripe green paint in bike lanes in areas where bike lanes conflict with car traffic.
Bike lane buffer extension to Piers Lane	Extend the existing bike lane buffer (located at the I-280 Interchange) north to the Piers Lane intersection. The bike lane buffer provides a striped separation between the auto travel lane and the bike lane.
Extend guardrail south of Bishop Lane	Extend the existing guardrail, or provide some other form of channelization, on the east side of Alpine Road south from its current end towards Piers Lane.
Bike slots at intersections and green paint in conflict areas (Ladera Area)	Modify striping to add a bike slot in three locations on southbound Alpine Road: La Mesa Drive, La Cuesta Drive, and the right-turn lane into Ladera Country Shopper. A bike slot is a striped bike lane between the through lanes and the right-turn lane provides a lane of travel for bicyclists. Stripe green paint in bike lanes in areas where bike lanes conflict with car traffic.
General path widening (Ladera Area)	Widen off-street trail to a consistent 8' on the east side of Alpine Road between La Mesa Drive and the I-280 Interchange. Path would not be widened in areas constrained by San Francisquito Creek.
Enhance/shift crosswalk south of La Mesa Drive	Relocate the existing crosswalk located just south of the Ladera Oaks Fitness Club driveway to the north side of the driveway, connecting to the shopping center driveway across the street. Install rapid rectangular flashing beacons (RRFBs) and lighting at the crosswalk and add pedestrian ramps.

Note that all Phase 1 improvements listed in Table 6-6 were desired by the community to be implemented in the short-term. The County has begun implementation of these improvements as a result of this study.



# Alpine Road

## CORRIDOR STUDY PROJECT

*Table 6-7: Prioritization of Phase 2 Improvements*

Improvement	Description
<b>Tier 1</b>	
Signals at I-280 ramps  Alternate: Roundabouts	Install traffic signals at the I-280 northbound and southbound ramp intersections.  Alternate: Construct two-lane roundabouts at the I-280 northbound and southbound ramp intersections. Would preclude the removal of the free southbound on-ramp. Bike lanes would connect to mixed-use paths at the roundabouts.
On-Street Path Extension to Stowe Lane	Provide an extension to the multi-use path which currently terminates approximately 350' north of Stowe Lane. The path would be located adjacent to Alpine Road and extend to the Stowe Lane intersection.
Roundabout at La Cuesta Drive  Alternate: Add turn lanes on La Cuesta Drive	Construct a single-lane roundabout at La Cuesta Drive. Bike lanes would connect to mixed-use paths at the roundabouts.  Alternate: Leave the intersection control as is (stop sign on La Cuesta Drive). Modify median to widen eastbound La Cuesta Drive to provide dedicated left-turn and right-turn lanes (widening would not impact trees or the existing monument sign in the median).
Extend acceleration lane and turn pockets at Stowe Lane and Bishop Lane	Lengthen the acceleration lanes and turn pockets on Alpine Road at Stowe Lane and Bishop Lane.
Restrict gas station exit at La Cuesta Drive	Restrict the gas station exit driveway located at the corner of La Cuesta Drive and Alpine Road to fuel delivery trucks only (impacts private property).
<b>Tier 2</b>	
Bike lane buffer extension to La Cuesta Drive	Extend the existing bike lane buffers (located at the I-280 Interchange) south to the La Cuesta Drive intersection.
Convert free right-turn at southbound off-ramp to stop control	Remove the free right-turn from the I-280 southbound off-ramp to southbound Alpine Road by bringing the right-turn lane to the intersection. Would be stop-controlled or signal-controlled (the latter only if the I-280 ramps are signalized).
Left-turn lanes and bike slot at Piers Lane	Provide a 150' southbound left-turn pocket at Piers Lane. Extend the existing northbound left-turn pocket by 50'. Extend the existing southbound right-turn pocket by 75'. Provide a 4' bike slot between the southbound right-turn pocket and the through lanes.
Consolidate driveway access at Wildwood Lane  Alternate: Two-way left-turn lane median at Wildwood Lane	Close the two existing Wildwood access points to Alpine Road and provide one access point to Wildwood Lane. Provide a 100' left turn lane on southbound Alpine Road. Provide a center turn lane on Alpine Road adjacent to Wildwood Lane and extending to Stowe Lane.  Alternate: Leave the two existing Wildwood Lane access points as is. A center turn lane would still be provided to enable side-street access.
Roundabout at La Mesa Drive	Construct a single-lane roundabout at La Mesa Drive. Bike lanes would connect to mixed-use paths at the roundabouts. Relocate the Jeep Trail driveway to a location that does not conflict with the roundabout.
Remove free southbound on-ramp from northbound Alpine Road	Eliminate the free right-turn on-ramp from northbound Alpine Road to southbound I-280. This ramp would be replaced by providing a left-turn lane from northbound Alpine Road to the loop ramp to southbound I-280.



# Alpine Road

## CORRIDOR STUDY PROJECT

Improvement	Description
<b>Tier 3</b>	
Close one right-out only Ladera Country Shopper access driveway	Close the right-out only driveway which exits the Ladera Country Shopper center to southbound Alpine Road just south of La Cuesta Drive (impacts private property).
Extend northbound on-ramp merge lane	Extend the merge lane on the northbound I-280 on-ramp.
Improve northbound bus stop at Stowe Lane	Stripe a designated pullout area for buses to pull over on northbound Alpine Road, just north of Stowe Lane, outside of the flow of traffic. Provide bench and paved waiting area for waiting passengers.
Dish Trail parking area modification (see note below)	Pave and stripe parking lot on County right-of-way at Piers Lane with designated stalls. Provide driveway to parking area from Alpine Road. Prohibit parking along Alpine Road in areas without marked stalls.

*Note: The Dish Trail parking area modification was presented to the community in Community Meeting #3. Subsequent engineering investigation identified that there was limited area within the public right-of-way at Piers Lane for designated parking stalls. Engineering survey would be required to assess the feasibility of providing an off-street parking area on public lands.*

Feedback from the final public meeting indicated a preference for the improvements originally in Phase 2 as opposed to any of the alternate improvements. The decision on intersection control at the I-280 ramps will be made as part of an ICE study per Caltrans requirements.

*Figure 6-4: Preferred Alternative Phase 1 Prioritization Results*

**Alpine Road Corridor Study Project**

Prioritization - Phase 1 Improvements

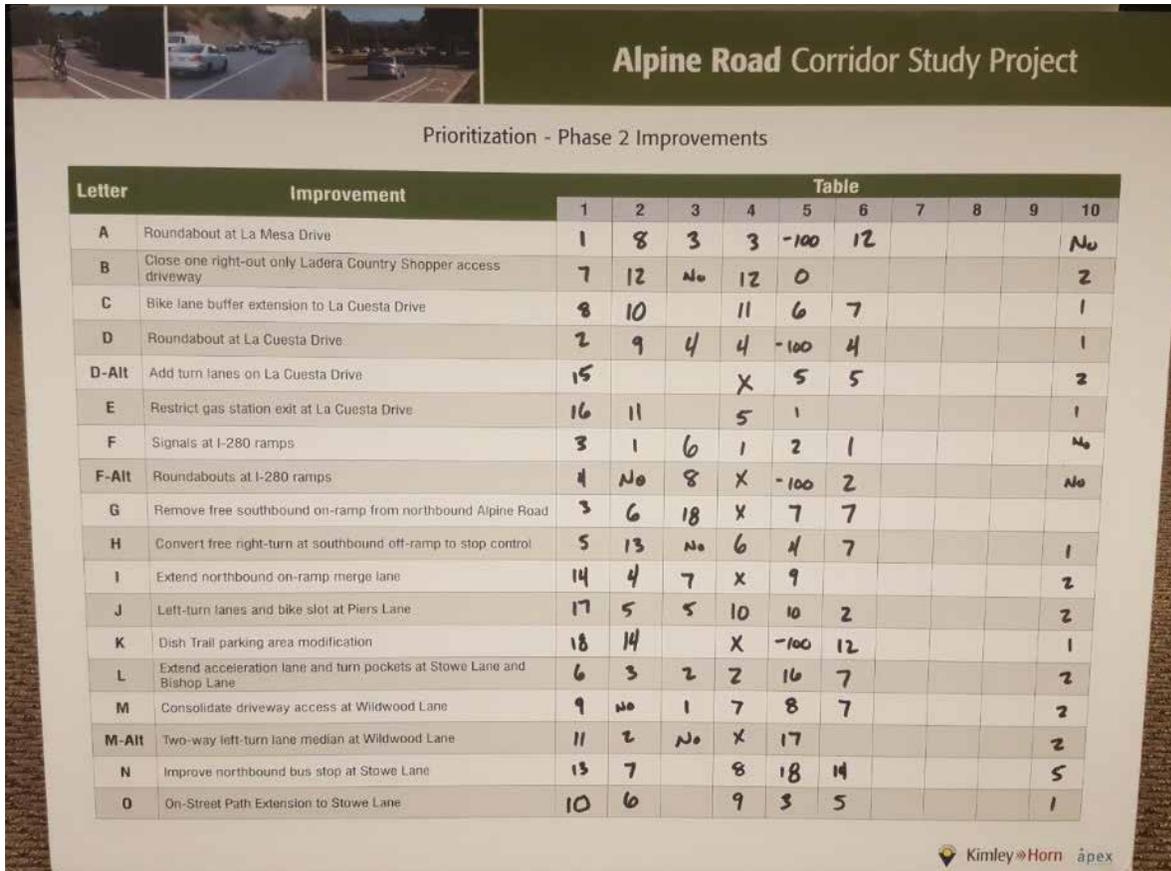
Letter	Improvement	Table									
		1	2	3	4	5	6	7	8	9	10
A	Enhance/shift crosswalk south of La Mesa Drive		11				9	3	9	8	
B	Install speed feedback signs in Ladera Area (2 locations)	1	10	4			7	3	3	3	
C	Install lighting and RRFBs at crosswalks at La Mesa Drive and at La Cuesta Drive	1	5	1			8	2	1	2	
D	General path widening (Ladera Area)	1	3				11	6	11	7	
E	Bike slots at intersections and green paint in conflict areas (Ladera Area)	1	6	2			10	11	7	8	
F	Bike lane buffer extension to Piers Lane	1	4	7			6	6	5	5	
G	Extend guardrail south of Bishop Lane	1	8				4	6	8	6	
H	Green bike lane striping (Stanford Weekend Acres Area)	1	7	3			5	6	6	5	
I	Keep Clear Zones at Piers Lane, Bishop Lane, Wildwood Lane, & Stowe Lane		1	8			2	1	4	1	
J	Install speed feedback signs in Stanford Weekend Acres Area (2 locations)		9	5			1	10	2	3	
K	Shift roadway to widen bike lane to 5' (striping change only)		2	6			3	3	10	4	

Kimley+Horn apex

# Alpine Road

## CORRIDOR STUDY PROJECT

Figure 6-5: Preferred Alternative Phase 2 Prioritization Results



Alpine Road Corridor Study Project

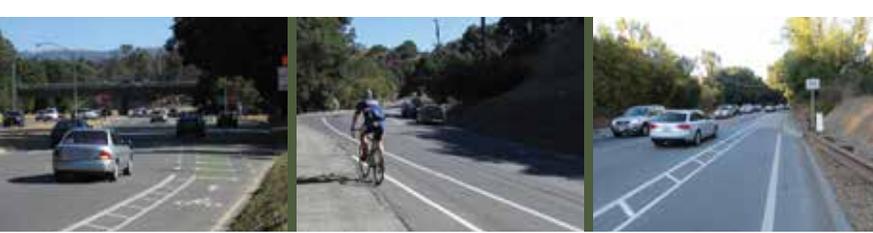
Prioritization - Phase 2 Improvements

Letter	Improvement	Table									
		1	2	3	4	5	6	7	8	9	10
A	Roundabout at La Mesa Drive	1	8	3	3	-100	12				No
B	Close one right-out only Ladera Country Shopper access driveway	7	12	No	12	0					2
C	Bike lane buffer extension to La Cuesta Drive	8	10		11	6	7				1
D	Roundabout at La Cuesta Drive	2	9	4	4	-100	4				1
D-Alt	Add turn lanes on La Cuesta Drive	15			X	5	5				2
E	Restrict gas station exit at La Cuesta Drive	16	11		5	1					1
F	Signals at I-280 ramps	3	1	6	1	2	1				No
F-Alt	Roundabouts at I-280 ramps	4	No	8	X	-100	2				No
G	Remove free southbound on-ramp from northbound Alpine Road	3	6	18	X	7	7				
H	Convert free right-turn at southbound off-ramp to stop control	5	13	No	6	4	7				1
I	Extend northbound on-ramp merge lane	14	4	7	X	9					2
J	Left-turn lanes and bike slot at Piers Lane	17	5	5	10	10	2				2
K	Dish Trail parking area modification	18	14		X	-100	12				1
L	Extend acceleration lane and turn pockets at Stowe Lane and Bishop Lane	6	3	2	2	16	7				2
M	Consolidate driveway access at Wildwood Lane	9	No	1	7	8	7				2
M-Alt	Two-way left-turn lane median at Wildwood Lane	11	2	No	X	17					2
N	Improve northbound bus stop at Stowe Lane	13	7		8	18	14				5
O	On-Street Path Extension to Stowe Lane	10	6		9	3	5				1

Kimley-Horn & Apex

Throughout the meeting, attendees were asked to submit any questions or comments on written notecards. These cards were compiled and sorted; similar comments and questions were grouped together. The meeting facilitator then presented these questions to the project team in an extended question and answer session which concluded the meeting. All comments were transcribed and documented in a meeting summary.

The meeting materials were posted online for the public to view after the meeting. A meeting summary is included in **Appendix B**.



# Alpine Road

## CORRIDOR STUDY PROJECT

## 7. Next Steps

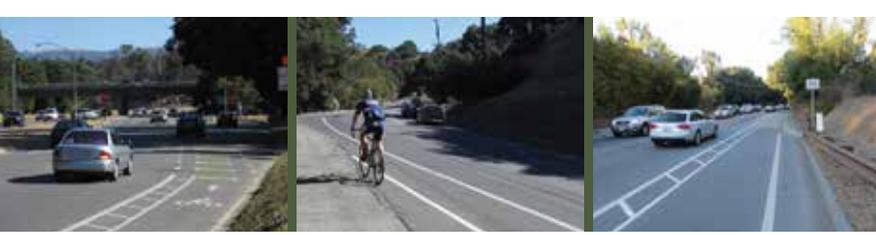
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Further engineering will be required to refine some of the improvement concepts included in the preferred alternative. The concepts have been designed to a conceptual level based on aerial photography. Some smaller Phase 1 improvements, such as the installation of speed feedback signs and speed limit reduction, may be implemented quickly. Funding for other Phase 1 improvements will need to be programmed as it becomes available. The Phase 2 improvements in the I-280 area will require review and coordination with Caltrans, and ultimately Caltrans approval for any modifications within its right-of-way. Any modifications to Dish Trail parking will require coordination with Stanford University, the property owner of the southern portion of the proposed parking lot, and an engineering survey to identify the limits of the public right-of-way.

As of March 2017, the County has begun the implementation of the following improvements:

- Reduced speed limit to 35 MPH
- RRFBs at crosswalks
- Speed feedback signs
- “Keep Clear” zones
- New signage

Grant funding will need to be identified for the implementation of Phase 2 improvements. The improvements may be competitive for a variety of grants focusing on improving bicycle and pedestrian connectivity and safety, roadway safety, and complete streets.



# Alpine Road

## CORRIDOR STUDY PROJECT

## Appendix A

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### Traffic Data

# ALL TRAFFIC DATA

San Mateo County  
All Vehicles & Uturns On Unshifted  
Bikes & Peds On Bank 1  
Nothing On Bank 2

(916) 771-8700  
[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 15-7794-001 Santa Cruz Avenue & Sand Hill Road  
Date : 10/21/2015

## Unshifted Count = All Vehicles & Uturns

START TIME	Santa Cruz Avenue Southbound					Sand Hill Road Westbound					Santa Cruz Avenue Northbound					Sand Hill Road Eastbound					Total	Uturns Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL			
7:00	25	84	43	0	152	28	65	5	0	98	19	91	110	0	220	32	194	39	1	266	736	1	
7:15	28	87	45	0	160	53	92	4	0	149	19	135	92	0	246	52	273	45	2	372	927	2	
7:30	30	135	42	0	207	111	142	10	0	263	17	175	99	0	291	65	274	55	0	394	1155	0	
7:45	63	174	70	0	307	79	104	10	0	193	38	168	110	0	316	62	251	44	1	358	1174	1	
<b>Total</b>	<b>146</b>	<b>480</b>	<b>200</b>	<b>0</b>	<b>826</b>	<b>271</b>	<b>403</b>	<b>29</b>	<b>0</b>	<b>703</b>	<b>93</b>	<b>569</b>	<b>411</b>	<b>0</b>	<b>1073</b>	<b>211</b>	<b>992</b>	<b>183</b>	<b>4</b>	<b>1390</b>	<b>3992</b>	<b>4</b>	
8:00	49	164	65	0	278	80	137	20	0	237	25	143	101	0	269	49	289	88	1	427	1211	1	
8:15	57	170	72	0	299	61	118	9	1	189	33	136	116	0	285	41	260	68	0	369	1142	1	
8:30	56	143	41	0	240	51	129	11	0	191	32	129	107	0	268	58	266	72	0	396	1095	0	
8:45	45	187	50	0	282	49	95	6	0	150	22	162	111	1	296	50	245	67	1	363	1091	2	
<b>Total</b>	<b>207</b>	<b>664</b>	<b>228</b>	<b>0</b>	<b>1099</b>	<b>241</b>	<b>479</b>	<b>46</b>	<b>1</b>	<b>767</b>	<b>112</b>	<b>570</b>	<b>435</b>	<b>1</b>	<b>1118</b>	<b>198</b>	<b>1060</b>	<b>295</b>	<b>2</b>	<b>1555</b>	<b>4539</b>	<b>4</b>	
14:00	28	95	46	0	169	106	192	29	0	327	36	101	86	0	223	54	150	20	0	224	943	0	
14:15	14	115	43	0	172	82	204	20	1	307	43	117	90	0	250	59	137	30	3	229	958	4	
14:30	20	111	44	0	175	127	206	25	1	359	34	138	58	0	230	61	121	30	2	214	978	3	
14:45	22	130	33	0	185	126	260	27	0	413	54	147	60	0	261	62	124	58	4	248	1107	4	
<b>Total</b>	<b>84</b>	<b>451</b>	<b>166</b>	<b>0</b>	<b>701</b>	<b>441</b>	<b>862</b>	<b>101</b>	<b>2</b>	<b>1406</b>	<b>167</b>	<b>503</b>	<b>294</b>	<b>0</b>	<b>964</b>	<b>236</b>	<b>532</b>	<b>138</b>	<b>9</b>	<b>915</b>	<b>3986</b>	<b>11</b>	
15:00	35	125	71	0	231	119	288	17	0	424	34	129	50	0	213	63	159	58	0	280	1148	0	
15:15	34	130	43	1	208	111	234	23	0	368	54	134	58	0	246	62	105	45	3	215	1037	4	
15:30	27	141	76	0	244	103	279	28	0	410	44	130	57	0	231	56	132	55	1	244	1129	1	
15:45	29	153	55	1	238	87	264	35	2	388	48	139	45	0	232	58	134	48	0	240	1098	3	
<b>Total</b>	<b>125</b>	<b>549</b>	<b>245</b>	<b>2</b>	<b>921</b>	<b>420</b>	<b>1065</b>	<b>103</b>	<b>2</b>	<b>1590</b>	<b>180</b>	<b>532</b>	<b>210</b>	<b>0</b>	<b>922</b>	<b>239</b>	<b>530</b>	<b>206</b>	<b>4</b>	<b>979</b>	<b>4412</b>	<b>8</b>	
16:00	27	115	61	2	205	81	287	31	1	400	50	157	53	0	260	73	126	55	2	256	1121	5	
16:15	17	124	45	0	186	98	308	35	0	441	49	153	40	0	242	55	134	52	1	242	1111	1	
16:30	24	130	40	0	194	94	270	58	0	422	47	147	58	1	253	59	146	50	0	255	1124	1	
16:45	17	130	37	0	184	92	269	51	0	412	43	168	46	1	258	97	138	50	1	286	1140	2	
<b>Total</b>	<b>85</b>	<b>499</b>	<b>183</b>	<b>2</b>	<b>769</b>	<b>365</b>	<b>1134</b>	<b>175</b>	<b>1</b>	<b>1675</b>	<b>189</b>	<b>625</b>	<b>197</b>	<b>2</b>	<b>1013</b>	<b>284</b>	<b>544</b>	<b>207</b>	<b>4</b>	<b>1039</b>	<b>4496</b>	<b>9</b>	
17:00	20	148	42	0	210	97	242	53	0	392	35	183	47	1	266	86	145	56	2	289	1157	3	
17:15	24	158	36	0	218	99	230	58	1	388	43	204	43	0	290	98	183	77	2	360	1256	3	
17:30	23	113	29	0	165	93	222	65	1	381	30	202	43	0	275	101	174	62	3	340	1161	4	
17:45	25	158	26	0	209	80	213	60	0	353	51	205	43	0	299	92	166	83	1	342	1203	1	
<b>Total</b>	<b>92</b>	<b>577</b>	<b>133</b>	<b>0</b>	<b>802</b>	<b>369</b>	<b>907</b>	<b>236</b>	<b>2</b>	<b>1514</b>	<b>159</b>	<b>794</b>	<b>176</b>	<b>1</b>	<b>1130</b>	<b>377</b>	<b>668</b>	<b>278</b>	<b>8</b>	<b>1331</b>	<b>4777</b>	<b>11</b>	
<b>Grand Total</b>	<b>739</b>	<b>3220</b>	<b>1155</b>	<b>4</b>	<b>5118</b>	<b>2107</b>	<b>4850</b>	<b>690</b>	<b>8</b>	<b>7655</b>	<b>900</b>	<b>3593</b>	<b>1723</b>	<b>4</b>	<b>6220</b>	<b>1545</b>	<b>4326</b>	<b>1307</b>	<b>31</b>	<b>7209</b>	<b>26202</b>	<b>47</b>	
<b>Apprch %</b>	<b>14.4%</b>	<b>62.9%</b>	<b>22.6%</b>	<b>0.1%</b>	<b>27.5%</b>	<b>63.4%</b>	<b>9.0%</b>	<b>0.1%</b>	<b>27.5%</b>	<b>63.4%</b>	<b>9.0%</b>	<b>0.1%</b>	<b>27.5%</b>	<b>63.4%</b>	<b>9.0%</b>	<b>14.5%</b>	<b>57.8%</b>	<b>27.7%</b>	<b>0.1%</b>	<b>21.4%</b>	<b>60.0%</b>	<b>18.1%</b>	<b>0.4%</b>
<b>Total %</b>	<b>2.8%</b>	<b>12.3%</b>	<b>4.4%</b>	<b>0.0%</b>	<b>19.5%</b>	<b>8.0%</b>	<b>18.5%</b>	<b>2.6%</b>	<b>0.0%</b>	<b>29.2%</b>	<b>3.4%</b>	<b>13.7%</b>	<b>6.6%</b>	<b>0.0%</b>	<b>23.7%</b>	<b>5.9%</b>	<b>16.5%</b>	<b>5.0%</b>	<b>0.1%</b>	<b>27.5%</b>	<b>100.0%</b>	<b>0.0%</b>	

AM PEAK HOUR	Santa Cruz Avenue Southbound					Sand Hill Road Westbound					Santa Cruz Avenue Northbound					Sand Hill Road Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 07:30 to 08:30																						
Peak Hour For Entire Intersection Begins at 07:30																						
7:30	30	135	42	0	207	111	142	10	0	263	17	175	99	0	291	65	274	55	0	394	1155	
7:45	63	174	70	0	307	79	104	10	0	193	38	168	110	0	316	62	251	44	1	358	1174	
8:00	49	164	65	0	278	80	137	20	0	237	25	143	101	0	269	49	289	88	1	427	1211	
8:15	57	170	72	0	299	61	118	9	1	189	33	136	116	0	285	41	260	68	0	369	1142	
<b>Total Volume</b>	<b>199</b>	<b>643</b>	<b>249</b>	<b>0</b>	<b>1091</b>	<b>331</b>	<b>501</b>	<b>49</b>	<b>1</b>	<b>882</b>	<b>113</b>	<b>622</b>	<b>426</b>	<b>0</b>	<b>1161</b>	<b>217</b>	<b>1074</b>	<b>255</b>	<b>2</b>	<b>1548</b>	<b>4682</b>	
<b>% App Total</b>	<b>18.2%</b>	<b>58.9%</b>	<b>22.8%</b>	<b>0.0%</b>	<b>37.5%</b>	<b>56.8%</b>	<b>5.6%</b>	<b>0.1%</b>	<b>27.5%</b>	<b>63.4%</b>	<b>9.7%</b>	<b>53.6%</b>	<b>36.7%</b>	<b>0.0%</b>	<b>14.0%</b>	<b>69.4%</b>	<b>16.5%</b>	<b>0.1%</b>	<b>21.4%</b>	<b>60.0%</b>	<b>18.1%</b>	<b>0.4%</b>
<b>PHF</b>	<b>.790</b>	<b>.924</b>	<b>.865</b>	<b>.000</b>	<b>.888</b>	<b>.745</b>	<b>.882</b>	<b>.613</b>	<b>.250</b>	<b>.838</b>	<b>.743</b>	<b>.889</b>	<b>.918</b>	<b>.000</b>	<b>.919</b>	<b>.835</b>	<b>.929</b>	<b>.724</b>	<b>.500</b>	<b>.906</b>	<b>.967</b>	

NOON PEAK HOUR	Santa Cruz Avenue Southbound					Sand Hill Road Westbound					Santa Cruz Avenue Northbound					Sand Hill Road Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 14:45 to 15:45																						
Peak Hour For Entire Intersection Begins at 14:45																						
14:45	22	130	33	0	185	126	260	27	0	413	54	147	60	0	261	62	124	58	4	248	1107	
15:00	35	125	71	0	231	119	288	17	0	424	34	129	50	0	213	63	159	58	0	280	1148	
15:15	34	130	43	1	208	111	234	23	0	368	54	134	58	0	246	62	105	45	3	215	1037	
15:30	27	141	76	0	244	103	279	28	0	410	44	130	57	0	231	56	132	55	1	244	1129	
<b>Total Volume</b>	<b>118</b>	<b>526</b>	<b>223</b>	<b>1</b>	<b>868</b>	<b>459</b>	<b>1061</b>	<b>95</b>	<b>0</b>	<b>1615</b>	<b>186</b>	<b>540</b>	<b>225</b>	<b>0</b>	<b>951</b>	<b>243</b>	<b>520</b>	<b>216</b>	<b>8</b>	<b>987</b>	<b>4421</b>	
<b>% App Total</b>	<b>13.6%</b>	<b>60.6%</b>	<b>25.7%</b>	<b>0.1%</b>	<b>28.4%</b>	<b>65.7%</b>	<b>5.9%</b>	<b>0.0%</b>	<b>27.5%</b>	<b>63.4%</b>	<b>9.7%</b>	<b>53.6%</b>	<b>36.7%</b>	<b>0.0%</b>	<b>14.0%</b>	<b>69.4%</b>	<b>16.5%</b>	<b>0.1%</b>	<b>21.4%</b>	<b>60.0%</b>	<b>18.1%</b>	<b>0.4%</b>
<b>PHF</b>	<b>.843</b>	<b>.933</b>	<b>.734</b>	<b>.250</b>	<b>.889</b>	<b>.911</b>	<b>.921</b>	<b>.848</b>	<b>.000</b>	<b>.952</b>	<b>.861</b>	<b>.916</b>	<b>.936</b>	<b>.000</b>	<b>.911</b>	<b>.964</b>	<b>.816</b>	<b>.931</b>	<b>.500</b>	<b>.881</b>	<b>.963</b>	

PM PEAK HOUR	Santa Cruz Avenue Southbound									
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# ALL TRAFFIC DATA

San Mateo County  
All Vehicles & Turns On Unshifted  
Bikes & Peds On Bank 1  
Nothing On Bank 2

(916) 771-8700  
[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 15-7794-002 Alpine Road & Junipero Serra Boulevard  
Date : 10/21/2015

## Unshifted Count = All Vehicles & Turns

START TIME	Alpine Road Southbound					Junipero Serra Boulevard Westbound					Alpine Road Northbound					Junipero Serra Boulevard Eastbound					Total	Utums Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	80	89	0	0	149	14	0	17	0	31	0	205	96	0	301	0	0	0	0	0	481	0
7:15	97	81	0	0	178	19	0	37	0	56	0	212	104	0	316	0	0	0	0	0	550	0
7:30	156	155	0	0	311	20	0	60	0	80	0	223	121	0	344	0	0	0	0	0	735	0
7:45	142	152	0	0	294	15	0	58	0	73	0	263	143	0	406	0	0	0	0	0	773	0
<b>Total</b>	<b>475</b>	<b>457</b>	<b>0</b>	<b>0</b>	<b>932</b>	<b>68</b>	<b>0</b>	<b>172</b>	<b>0</b>	<b>240</b>	<b>0</b>	<b>903</b>	<b>464</b>	<b>0</b>	<b>1367</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2539</b>	<b>0</b>
8:00	173	155	0	0	328	17	0	70	0	87	0	216	150	0	366	0	0	0	0	0	781	0
8:15	191	122	0	0	313	22	0	59	0	81	0	222	127	0	349	0	0	0	0	0	743	0
8:30	154	103	0	0	257	26	0	69	0	95	0	207	121	0	328	0	0	0	0	0	680	0
8:45	168	130	0	0	298	21	0	50	0	71	0	237	115	0	352	0	0	0	0	0	721	0
<b>Total</b>	<b>686</b>	<b>510</b>	<b>0</b>	<b>0</b>	<b>1196</b>	<b>86</b>	<b>0</b>	<b>248</b>	<b>0</b>	<b>334</b>	<b>0</b>	<b>882</b>	<b>513</b>	<b>0</b>	<b>1395</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2925</b>	<b>0</b>
14:00	68	167	0	0	235	58	0	88	0	146	0	136	20	0	156	0	0	0	0	0	537	0
14:15	70	144	0	0	214	52	0	80	0	132	0	166	28	0	194	0	0	0	0	0	540	0
14:30	67	210	0	0	277	61	0	92	0	153	0	149	39	0	188	0	0	0	0	0	618	0
14:45	95	211	0	0	306	71	0	106	0	177	0	146	32	0	178	0	0	0	0	0	661	0
<b>Total</b>	<b>300</b>	<b>732</b>	<b>0</b>	<b>0</b>	<b>1032</b>	<b>242</b>	<b>0</b>	<b>366</b>	<b>0</b>	<b>608</b>	<b>0</b>	<b>597</b>	<b>119</b>	<b>0</b>	<b>716</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2356</b>	<b>0</b>
15:00	79	230	0	0	309	91	0	86	0	177	0	141	21	0	162	0	0	0	0	0	648	0
15:15	92	195	0	0	287	58	0	84	0	142	0	148	27	0	175	0	0	0	0	0	604	0
15:30	111	208	0	1	320	59	0	107	0	166	0	134	27	0	161	0	0	0	0	0	647	1
15:45	92	174	0	0	266	75	0	103	0	178	0	142	24	0	166	0	0	0	0	0	610	0
<b>Total</b>	<b>374</b>	<b>807</b>	<b>0</b>	<b>1</b>	<b>1182</b>	<b>283</b>	<b>0</b>	<b>380</b>	<b>0</b>	<b>663</b>	<b>0</b>	<b>565</b>	<b>99</b>	<b>0</b>	<b>664</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2509</b>	<b>1</b>
16:00	95	159	0	0	254	74	0	88	0	162	0	160	29	0	189	0	0	0	0	0	605	0
16:15	90	179	0	0	269	87	0	135	0	222	0	116	35	0	151	0	0	0	0	0	642	0
16:30	92	171	0	0	263	99	0	111	0	210	0	144	36	0	180	0	0	0	0	0	653	0
16:45	110	173	0	0	283	95	0	116	0	211	0	161	37	0	198	0	0	0	0	0	692	0
<b>Total</b>	<b>387</b>	<b>682</b>	<b>0</b>	<b>0</b>	<b>1069</b>	<b>355</b>	<b>0</b>	<b>450</b>	<b>0</b>	<b>805</b>	<b>0</b>	<b>581</b>	<b>137</b>	<b>0</b>	<b>718</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2592</b>	<b>0</b>
17:00	112	186	0	0	298	101	0	98	0	199	0	166	35	0	201	0	0	0	0	0	698	0
17:15	122	221	0	0	343	122	0	115	0	237	0	181	36	0	217	0	0	0	0	0	797	0
17:30	103	175	0	0	278	89	0	94	0	183	0	168	38	0	206	0	0	0	0	0	667	0
17:45	117	179	0	0	296	105	0	127	0	232	0	163	38	0	201	0	0	0	0	0	729	0
<b>Total</b>	<b>454</b>	<b>761</b>	<b>0</b>	<b>0</b>	<b>1215</b>	<b>417</b>	<b>0</b>	<b>434</b>	<b>0</b>	<b>851</b>	<b>0</b>	<b>678</b>	<b>147</b>	<b>0</b>	<b>825</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2891</b>	<b>0</b>
<b>Grand Total</b>	<b>2676</b>	<b>3949</b>	<b>0</b>	<b>1</b>	<b>6626</b>	<b>1451</b>	<b>0</b>	<b>2050</b>	<b>0</b>	<b>3501</b>	<b>0</b>	<b>4206</b>	<b>1479</b>	<b>0</b>	<b>5685</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15812</b>	<b>1</b>
<b>Apprch %</b>	<b>40.4%</b>	<b>59.6%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>41.4%</b>	<b>0.0%</b>	<b>58.6%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>74.0%</b>	<b>26.0%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>			
<b>Total %</b>	<b>16.9%</b>	<b>25.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>41.9%</b>	<b>9.2%</b>	<b>0.0%</b>	<b>13.0%</b>	<b>0.0%</b>	<b>22.1%</b>	<b>0.0%</b>	<b>26.6%</b>	<b>9.4%</b>	<b>0.0%</b>	<b>36.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>	

AM PEAK HOUR	Alpine Road Southbound					Junipero Serra Boulevard Westbound					Alpine Road Northbound					Junipero Serra Boulevard Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	156	155	0	0	311	20	0	60	0	80	0	223	121	0	344	0	0	0	0	0	735
7:45	142	152	0	0	294	15	0	58	0	73	0	263	143	0	406	0	0	0	0	0	773
8:00	173	155	0	0	328	17	0	70	0	87	0	216	150	0	366	0	0	0	0	0	781
8:15	191	122	0	0	313	22	0	59	0	81	0	222	127	0	349	0	0	0	0	0	743
<b>Total Volume</b>	<b>662</b>	<b>584</b>	<b>0</b>	<b>0</b>	<b>1246</b>	<b>74</b>	<b>0</b>	<b>247</b>	<b>0</b>	<b>321</b>	<b>0</b>	<b>924</b>	<b>541</b>	<b>0</b>	<b>1465</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3032</b>
<b>% App Total</b>	<b>53.1%</b>	<b>46.9%</b>	<b>0.0%</b>	<b>0.0%</b>		<b>23.1%</b>	<b>0.0%</b>	<b>76.9%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>63.1%</b>	<b>36.9%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		
PHF	.866	.942	.000	.000	.950	.841	.000	.882	.000	.922	.000	.878	.902	.000	.902	.000	.000	.000	.000	.000	.971

NOON PEAK HOUR	Alpine Road Southbound					Junipero Serra Boulevard Westbound					Alpine Road Northbound					Junipero Serra Boulevard Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 14:45 to 15:45																					
Peak Hour For Entire Intersection Begins at 14:45																					
14:45	95	211	0	0	306	71	0	106	0	177	0	146	32	0	178	0	0	0	0	0	661
15:00	79	230	0	0	309	91	0	86	0	177	0	141	21	0	162	0	0	0	0	0	648
15:15	92	195	0	0	287	58	0	84	0	142	0	148	27	0	175	0	0	0	0	0	604
15:30	111	208	0	1	320	59	0	107	0	166	0	134	27	0	161	0	0	0	0	0	647
<b>Total Volume</b>	<b>377</b>	<b>844</b>	<b>0</b>	<b>1</b>	<b>1222</b>	<b>279</b>	<b>0</b>	<b>383</b>	<b>0</b>	<b>662</b>	<b>0</b>	<b>569</b>	<b>107</b>	<b>0</b>	<b>676</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2560</b>
<b>% App Total</b>	<b>30.9%</b>	<b>69.1%</b>	<b>0.0%</b>	<b>0.1%</b>		<b>42.1%</b>	<b>0.0%</b>	<b>57.9%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>84.2%</b>	<b>15.8%</b>	<b>0.0%</b>		<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		
PHF	.849	.917	.000	.250	.955	.766	.000	.895	.000	.935	.000	.961	.836	.000	.949	.000	.000	.000	.000	.000	.968

PM PEAK HOUR	Alpine Road Southbound					Junipero Serra Boulevard Westbound					Alpine Road Northbound					Junipero Serra Boulevard Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	112	186	0	0	298	101	0	98	0	199	0	166	35	0	201	0	0	0	0	0	698
17:15	122	221	0	0	343	122	0	115	0	237	0	181	36	0	217	0	0	0	0	0	797
17:30	103	175	0	0	278	89	0	94	0	183	0	168	38	0	206	0	0	0	0	0	667

# ALL TRAFFIC DATA

San Mateo County  
All Vehicles & Turns On Unshifted  
Bikes & Peds On Bank 1  
Nothing On Bank 2

(916) 771-8700  
[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 15-7794-003 Alpine Road & Stowe Lane  
Date : 10/21/2015

## Unshifted Count = All Vehicles & Turns

START TIME	Alpine Road Southbound					Stowe Lane Westbound					Alpine Road Northbound					Stowe Lane Eastbound					Total	Utums Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	0	84	0	0	84	2	0	0	0	2	0	289	0	0	289	0	0	0	0	0	375	0
7:15	0	99	0	0	99	0	0	1	0	1	0	347	0	0	347	0	0	0	0	0	447	0
7:30	2	176	0	1	179	1	0	1	0	2	0	354	0	0	354	0	0	0	0	0	535	1
7:45	1	166	0	0	167	0	0	2	0	2	0	387	0	0	387	0	0	0	0	0	556	0
<b>Total</b>	<b>3</b>	<b>525</b>	<b>0</b>	<b>1</b>	<b>529</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>1377</b>	<b>0</b>	<b>0</b>	<b>1377</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1913</b>	<b>1</b>
8:00	1	170	0	0	171	0	0	1	0	1	0	352	0	0	352	0	0	0	0	0	524	0
8:15	2	140	0	0	142	0	0	1	0	1	0	338	0	0	338	0	0	0	0	0	481	0
8:30	0	124	0	0	124	1	0	1	0	2	0	341	1	0	342	0	0	0	0	0	468	0
8:45	3	153	0	0	156	0	0	3	0	3	0	356	1	0	357	0	0	0	0	0	516	0
<b>Total</b>	<b>6</b>	<b>587</b>	<b>0</b>	<b>0</b>	<b>593</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>1387</b>	<b>2</b>	<b>0</b>	<b>1389</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1989</b>	<b>0</b>
14:00	1	219	0	1	221	1	0	3	0	4	0	164	0	0	164	0	0	0	0	0	389	1
14:15	1	202	0	1	204	2	0	0	0	2	0	191	0	0	191	0	0	0	0	0	397	1
14:30	1	258	0	0	259	0	0	0	0	0	0	195	2	0	197	0	0	0	0	0	456	0
14:45	2	286	0	0	288	3	0	2	0	5	0	180	1	0	181	0	0	0	0	0	474	0
<b>Total</b>	<b>5</b>	<b>965</b>	<b>0</b>	<b>2</b>	<b>972</b>	<b>6</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>730</b>	<b>3</b>	<b>0</b>	<b>733</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1716</b>	<b>2</b>
15:00	3	309	0	0	312	1	0	0	0	1	0	166	0	0	166	0	0	0	0	0	479	0
15:15	1	256	0	1	258	0	0	1	0	1	0	156	1	0	157	0	0	0	0	0	416	1
15:30	1	277	0	0	278	0	0	2	0	2	0	173	0	0	173	0	0	0	0	0	453	0
15:45	1	266	0	0	267	0	0	1	0	1	0	174	0	0	174	0	0	0	0	0	442	0
<b>Total</b>	<b>6</b>	<b>1108</b>	<b>0</b>	<b>1</b>	<b>1115</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>669</b>	<b>1</b>	<b>0</b>	<b>670</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1790</b>	<b>1</b>
16:00	1	239	0	0	240	1	0	0	0	1	0	182	3	0	185	0	0	0	0	0	426	0
16:15	0	262	0	0	262	0	0	4	0	4	0	159	1	0	160	0	0	0	0	0	426	0
16:30	1	271	0	1	273	0	0	1	0	1	0	171	1	0	172	0	0	0	0	0	446	1
16:45	2	263	0	0	265	0	0	1	0	1	0	204	0	0	204	0	0	0	0	0	470	0
<b>Total</b>	<b>4</b>	<b>1035</b>	<b>0</b>	<b>1</b>	<b>1040</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>716</b>	<b>5</b>	<b>0</b>	<b>721</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1768</b>	<b>1</b>
17:00	3	295	0	0	298	0	0	2	0	2	0	193	1	0	194	0	0	0	0	0	494	0
17:15	3	333	0	0	336	1	0	3	0	4	0	211	0	0	211	0	0	0	0	0	551	0
17:30	2	272	0	1	275	0	0	4	0	4	0	208	0	0	208	0	0	0	0	0	487	1
17:45	1	271	0	0	272	0	0	1	0	1	0	193	0	1	194	0	0	0	0	0	467	1
<b>Total</b>	<b>9</b>	<b>1171</b>	<b>0</b>	<b>1</b>	<b>1181</b>	<b>1</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>805</b>	<b>1</b>	<b>1</b>	<b>807</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1999</b>	<b>2</b>
<b>Grand Total</b>	<b>33</b>	<b>5391</b>	<b>0</b>	<b>6</b>	<b>5430</b>	<b>13</b>	<b>0</b>	<b>35</b>	<b>0</b>	<b>48</b>	<b>0</b>	<b>5684</b>	<b>12</b>	<b>1</b>	<b>5697</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11175</b>	<b>7</b>
<b>Apprch %</b>	<b>0.6%</b>	<b>99.3%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>48.6%</b>	<b>27.1%</b>	<b>0.0%</b>	<b>72.9%</b>	<b>0.0%</b>	<b>0.4%</b>	<b>0.0%</b>	<b>99.8%</b>	<b>0.2%</b>	<b>0.0%</b>	<b>51.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>
<b>Total %</b>	<b>0.3%</b>	<b>48.2%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>48.6%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.3%</b>	<b>0.0%</b>	<b>0.4%</b>	<b>0.0%</b>	<b>50.9%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>51.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>

START TIME	Alpine Road Southbound					Stowe Lane Westbound					Alpine Road Northbound					Stowe Lane Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	2	176	0	1	179	1	0	1	0	2	0	354	0	0	354	0	0	0	0	0	535
7:45	1	166	0	0	167	0	0	2	0	2	0	387	0	0	387	0	0	0	0	0	556
8:00	1	170	0	0	171	0	0	1	0	1	0	352	0	0	352	0	0	0	0	0	524
8:15	2	140	0	0	142	0	0	1	0	1	0	338	0	0	338	0	0	0	0	0	481
<b>Total Volume</b>	<b>6</b>	<b>652</b>	<b>0</b>	<b>1</b>	<b>659</b>	<b>1</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>1431</b>	<b>0</b>	<b>0</b>	<b>1431</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2096</b>
<b>% App Total</b>	<b>0.9%</b>	<b>98.9%</b>	<b>0.0%</b>	<b>0.2%</b>	<b>16.7%</b>	<b>0.0%</b>	<b>83.3%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>
<b>PHF</b>	<b>.750</b>	<b>.926</b>	<b>.000</b>	<b>.250</b>	<b>.920</b>	<b>.250</b>	<b>.000</b>	<b>.625</b>	<b>.000</b>	<b>.750</b>	<b>.000</b>	<b>.924</b>	<b>.000</b>	<b>.000</b>	<b>.924</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.942</b>

START TIME	Alpine Road Southbound					Stowe Lane Westbound					Alpine Road Northbound					Stowe Lane Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 14:30 to 15:30																					
Peak Hour For Entire Intersection Begins at 14:30																					
14:30	1	258	0	0	259	0	0	0	0	0	0	195	2	0	197	0	0	0	0	0	456
14:45	2	286	0	0	288	3	0	2	0	5	0	180	1	0	181	0	0	0	0	0	474
15:00	3	309	0	0	312	1	0	0	0	1	0	166	0	0	166	0	0	0	0	0	479
15:15	1	256	0	1	258	0	0	1	0	1	0	156	1	0	157	0	0	0	0	0	416
<b>Total Volume</b>	<b>7</b>	<b>1109</b>	<b>0</b>	<b>1</b>	<b>1117</b>	<b>4</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>697</b>	<b>4</b>	<b>0</b>	<b>701</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1825</b>
<b>% App Total</b>	<b>0.6%</b>	<b>99.3%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>57.1%</b>	<b>0.0%</b>	<b>42.9%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>99.4%</b>	<b>0.6%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>
<b>PHF</b>	<b>.583</b>	<b>.897</b>	<b>.000</b>	<b>.250</b>	<b>.895</b>	<b>.333</b>	<b>.000</b>	<b>.375</b>	<b>.000</b>	<b>.350</b>	<b>.000</b>	<b>.894</b>	<b>.500</b>	<b>.000</b>	<b>.890</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.953</b>

START TIME	Alpine Road Southbound					Stowe Lane Westbound					Alpine Road Northbound					Stowe Lane Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	2	263	0	0	265	0	0	1	0	1	0	204	0	0	204	0	0	0	0	0	470
17:00	3	295	0	0	298	0	0	2	0	2	0	193	1	0	194	0	0	0	0	0	494
17:15	3	333	0	0	336	1	0	3	0	4	0	211	0	0	211	0	0	0	0	0	551
17:30	2	272	0	1	275	0	0	4	0	4	0	208	0	0	208	0	0	0	0	0	487
<b>Total Volume</b>	<b>10</b>	<b>1163</b>	<b>0</b>	<b>1</b>	<b>1174</b>	<b>1</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>816</b>	<b>1</b>	<b>0</b>	<b>817</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2002</b>
<b>% App Total</b>	<b>0.9%</b>	<b>99.1%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>9.1%</b>	<b>0.0%</b>	<b>90.9%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>99.9%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>
<b>PHF</b>	<b>.833</b>	<b>.873</b>	<b>.000</b>	<b>.250</b>	<b>.874</b>	<b>.250</b>	<b>.000</b>	<b>.625</b>	<b>.000</b>	<b>.688</b>	<b>.000</b>	<b>.967</b>	<b>.250</b>	<b>.000</b>	<b>.968</b>	<b>.000</b>	<b>.000</b>				

# ALL TRAFFIC DATA

San Mateo County  
All Vehicles & Turns On Unshifted  
Bikes & Peds On Bank 1  
Nothing On Bank 2

(916) 771-8700  
[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 15-7794-004 Alpine Road & Wildwood Lane(North)  
Date : 10/21/2015

## Unshifted Count = All Vehicles & Turns

START TIME	Alpine Road Southbound					Wildwood Lane(North) Westbound					Alpine Road Northbound					Wildwood Lane(North) Eastbound					Total	Utums Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	0	89	0	0	89	0	0	1	0	1	0	295	0	0	295	0	0	0	0	0	385	0
7:15	1	98	0	0	99	0	0	0	0	0	0	341	0	0	341	0	0	0	0	0	440	0
7:30	1	165	0	0	166	0	0	2	0	2	0	357	0	0	357	0	0	0	0	0	525	0
7:45	0	175	0	0	175	0	0	5	0	5	0	371	0	0	371	0	0	0	0	0	551	0
<b>Total</b>	<b>2</b>	<b>527</b>	<b>0</b>	<b>0</b>	<b>529</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>1364</b>	<b>0</b>	<b>0</b>	<b>1364</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1901</b>	<b>0</b>
8:00	0	171	0	0	171	1	0	0	0	1	0	355	0	0	355	0	0	0	0	0	527	0
8:15	1	139	0	0	140	0	0	1	0	1	0	343	1	0	344	0	0	0	0	0	485	0
8:30	1	125	0	0	126	0	0	2	0	2	0	338	0	0	338	0	0	0	0	0	466	0
8:45	0	153	0	0	153	0	0	2	0	2	0	347	0	0	347	0	0	0	0	0	502	0
<b>Total</b>	<b>2</b>	<b>588</b>	<b>0</b>	<b>0</b>	<b>590</b>	<b>1</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>1383</b>	<b>1</b>	<b>0</b>	<b>1384</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1980</b>	<b>0</b>
14:00	0	217	0	0	217	0	0	0	0	0	0	165	0	0	165	0	0	0	0	0	382	0
14:15	4	207	0	0	211	0	0	2	0	2	0	185	0	0	185	0	0	0	0	0	398	0
14:30	0	260	0	0	260	0	0	1	0	1	0	199	0	0	199	0	0	0	0	0	460	0
14:45	1	277	0	0	278	0	0	0	0	0	0	177	0	0	177	0	0	0	0	0	455	0
<b>Total</b>	<b>5</b>	<b>961</b>	<b>0</b>	<b>0</b>	<b>966</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>726</b>	<b>0</b>	<b>0</b>	<b>726</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1695</b>	<b>0</b>
15:00	2	307	0	0	309	0	0	2	0	2	0	167	0	0	167	0	0	0	0	0	478	0
15:15	1	254	0	0	255	1	0	1	0	2	0	153	0	0	153	0	0	0	0	0	410	0
15:30	0	275	0	0	275	1	0	3	0	4	0	169	0	0	169	0	0	0	0	0	448	0
15:45	1	268	0	0	269	0	0	0	0	0	0	169	0	0	169	0	0	0	0	0	438	0
<b>Total</b>	<b>4</b>	<b>1104</b>	<b>0</b>	<b>0</b>	<b>1108</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>658</b>	<b>0</b>	<b>0</b>	<b>658</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1774</b>	<b>0</b>
16:00	0	247	0	0	247	0	0	2	0	2	0	184	0	0	184	0	0	0	0	0	433	0
16:15	2	257	0	0	259	1	0	1	0	2	0	159	0	0	159	0	0	0	0	0	420	0
16:30	1	271	0	0	272	0	0	1	0	1	0	170	0	0	170	0	0	0	0	0	443	0
16:45	0	258	0	0	258	0	0	2	0	2	0	200	0	0	200	0	0	0	0	0	460	0
<b>Total</b>	<b>3</b>	<b>1033</b>	<b>0</b>	<b>0</b>	<b>1036</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>713</b>	<b>0</b>	<b>0</b>	<b>713</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1756</b>	<b>0</b>
17:00	0	300	0	0	300	0	0	1	0	1	0	195	0	0	195	0	0	0	0	0	496	0
17:15	0	331	0	0	331	0	0	0	0	0	0	209	0	0	209	0	0	0	0	0	540	0
17:30	3	274	0	0	277	0	0	0	0	0	0	208	0	0	208	0	0	0	0	0	485	0
17:45	0	275	0	0	275	0	0	0	0	0	0	207	0	0	207	0	0	0	0	0	482	0
<b>Total</b>	<b>3</b>	<b>1180</b>	<b>0</b>	<b>0</b>	<b>1183</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>819</b>	<b>0</b>	<b>0</b>	<b>819</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2003</b>	<b>0</b>
<b>Grand Total</b>	<b>19</b>	<b>5393</b>	<b>0</b>	<b>0</b>	<b>5412</b>	<b>4</b>	<b>0</b>	<b>29</b>	<b>0</b>	<b>33</b>	<b>0</b>	<b>5663</b>	<b>1</b>	<b>0</b>	<b>5664</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11109</b>	<b>0</b>
<b>Apprch %</b>	<b>0.4%</b>	<b>99.6%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>48.7%</b>	<b>12.1%</b>	<b>0.0%</b>	<b>87.9%</b>	<b>0.0%</b>	<b>0.3%</b>	<b>0.0%</b>	<b>100.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>51.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>
<b>Total %</b>	<b>0.2%</b>	<b>48.5%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>48.7%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.3%</b>	<b>0.0%</b>	<b>0.3%</b>	<b>0.0%</b>	<b>51.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>51.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>

AM PEAK HOUR	Alpine Road Southbound					Wildwood Lane(North) Westbound					Alpine Road Northbound					Wildwood Lane(North) Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 07:30 to 08:30																						
Peak Hour For Entire Intersection Begins at 07:30																						
7:30	1	165	0	0	166	0	0	2	0	2	0	357	0	0	357	0	0	0	0	0	525	0
7:45	0	175	0	0	175	0	0	5	0	5	0	371	0	0	371	0	0	0	0	0	551	0
8:00	0	171	0	0	171	1	0	0	0	1	0	355	0	0	355	0	0	0	0	0	527	0
8:15	1	139	0	0	140	0	0	1	0	1	0	343	1	0	344	0	0	0	0	0	485	0
<b>Total Volume</b>	<b>2</b>	<b>650</b>	<b>0</b>	<b>0</b>	<b>652</b>	<b>1</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>1426</b>	<b>1</b>	<b>0</b>	<b>1427</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2088</b>	<b>0</b>
<b>% App Total</b>	<b>0.3%</b>	<b>99.7%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>11.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>88.9%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>99.9%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>
<b>PHF</b>	<b>.500</b>	<b>.929</b>	<b>.000</b>	<b>.000</b>	<b>.931</b>	<b>.250</b>	<b>.000</b>	<b>.400</b>	<b>.000</b>	<b>.450</b>	<b>.000</b>	<b>.961</b>	<b>.250</b>	<b>.000</b>	<b>.962</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.947</b>

NOON PEAK HOUR	Alpine Road Southbound					Wildwood Lane(North) Westbound					Alpine Road Northbound					Wildwood Lane(North) Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 14:30 to 15:30																						
Peak Hour For Entire Intersection Begins at 14:30																						
14:30	0	260	0	0	260	0	0	1	0	1	0	199	0	0	199	0	0	0	0	0	460	0
14:45	1	277	0	0	278	0	0	0	0	0	0	177	0	0	177	0	0	0	0	0	455	0
15:00	2	307	0	0	309	0	0	2	0	2	0	167	0	0	167	0	0	0	0	0	478	0
15:15	1	254	0	0	255	1	0	1	0	2	0	153	0	0	153	0	0	0	0	0	410	0
<b>Total Volume</b>	<b>4</b>	<b>1098</b>	<b>0</b>	<b>0</b>	<b>1102</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>696</b>	<b>0</b>	<b>0</b>	<b>696</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1803</b>	<b>0</b>
<b>% App Total</b>	<b>0.4%</b>	<b>99.6%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>20.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>80.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>
<b>PHF</b>	<b>.500</b>	<b>.894</b>	<b>.000</b>	<b>.000</b>	<b>.892</b>	<b>.250</b>	<b>.000</b>	<b>.500</b>	<b>.000</b>	<b>.625</b>	<b>.000</b>	<b>.874</b>	<b>.000</b>	<b>.000</b>	<b>.874</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.943</b>

PM PEAK HOUR	Alpine Road Southbound					Wildwood Lane(North) Westbound					Alpine Road Northbound					Wildwood Lane(North) Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 17:00 to 18:00																						
Peak Hour For Entire Intersection Begins at 17:00																						
17:00	0	300	0	0	300	0	0	1	0	1	0	195	0	0	195	0	0	0	0	0	496	0
17:15	0	331	0	0	331	0	0	0	0	0	0	209	0	0	209	0	0	0	0	0	540	0
17:30	3	274	0	0	277	0	0	0	0	0	0	208	0	0	208	0	0	0	0	0	485	0
17:45	0	275	0	0	275	0	0	0	0	0	0	207	0	0	207	0	0	0	0	0	482	0
<b>Total Volume</b>	<b>3</b>	<b>1180</b>	<b>0</b>	<b>0</b>	<b>1183</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>819</b>	<b>0</b>	<b>0</b>	<b>819</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2003</b>	<b>0</b>
<b>% App Total</b>	<b>0.3%</b>	<b>99.7%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>
<b>PHF</b>	<b>.250&lt;/</b>																					

# ALL TRAFFIC DATA

San Mateo County  
 All Vehicles & Turns On Unshifted  
 Bikes & Peds On Bank 1  
 Nothing On Bank 2

(916) 771-8700  
[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 15-7794-005 Alpine Road & Wildwood Lane(South)  
 Date : 10/21/2015

## Unshifted Count = All Vehicles & Turns

START TIME	Alpine Road Southbound					Wildwood Lane(South) Westbound					Alpine Road Northbound					Wildwood Lane(South) Eastbound					Total	Utums Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	0	91	0	0	91	0	0	0	0	0	0	291	0	0	291	0	0	0	0	0	382	0
7:15	0	98	0	0	98	1	0	0	0	1	0	344	0	0	344	0	0	0	0	0	443	0
7:30	0	162	0	0	162	0	0	0	0	0	0	358	0	0	358	0	0	0	0	0	520	0
7:45	0	168	0	0	168	0	0	0	0	0	0	373	1	0	374	0	0	0	0	0	542	0
<b>Total</b>	<b>0</b>	<b>519</b>	<b>0</b>	<b>0</b>	<b>519</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1366</b>	<b>1</b>	<b>0</b>	<b>1367</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1887</b>	<b>0</b>
8:00	0	174	0	0	174	1	0	0	0	1	0	356	1	0	357	0	0	0	0	0	532	0
8:15	0	145	0	0	145	0	0	0	0	0	0	346	0	0	346	0	0	0	0	0	491	0
8:30	0	131	0	0	131	0	0	0	0	0	0	341	1	0	342	0	0	0	0	0	473	0
8:45	0	148	0	0	148	0	0	0	0	0	0	345	1	0	346	0	0	0	0	0	494	0
<b>Total</b>	<b>0</b>	<b>598</b>	<b>0</b>	<b>0</b>	<b>598</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1388</b>	<b>3</b>	<b>0</b>	<b>1391</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1990</b>	<b>0</b>
14:00	0	218	0	0	218	0	0	0	0	0	0	164	0	0	164	0	0	0	0	0	382	0
14:15	0	206	0	0	206	0	0	0	0	0	0	184	0	0	184	0	0	0	0	0	390	0
14:30	1	261	0	1	263	0	0	1	0	1	0	200	0	0	200	0	0	0	0	0	464	1
14:45	0	273	0	0	273	0	0	0	0	0	0	178	1	0	179	0	0	0	0	0	452	0
<b>Total</b>	<b>1</b>	<b>958</b>	<b>0</b>	<b>1</b>	<b>960</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>726</b>	<b>1</b>	<b>0</b>	<b>727</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1688</b>	<b>1</b>
15:00	0	305	0	0	305	0	0	0	0	0	0	165	0	0	165	0	0	0	0	0	470	0
15:15	0	256	0	0	256	0	0	0	0	0	0	156	1	0	157	0	0	0	0	0	413	0
15:30	1	274	0	0	275	0	0	0	0	0	0	167	2	0	169	0	0	0	0	0	444	0
15:45	0	274	0	0	274	0	0	0	0	0	0	170	0	0	170	0	0	0	0	0	444	0
<b>Total</b>	<b>1</b>	<b>1109</b>	<b>0</b>	<b>0</b>	<b>1110</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>658</b>	<b>3</b>	<b>0</b>	<b>661</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1771</b>	<b>0</b>
16:00	0	244	0	0	244	0	0	0	0	0	0	183	1	0	184	0	0	0	0	0	428	0
16:15	0	255	0	0	255	0	0	0	0	0	0	158	0	0	158	0	0	0	0	0	413	0
16:30	1	279	0	0	280	0	0	0	0	0	0	172	1	0	173	0	0	0	0	0	453	0
16:45	0	256	0	0	256	0	0	1	0	1	0	201	2	0	203	0	0	0	0	0	460	0
<b>Total</b>	<b>1</b>	<b>1034</b>	<b>0</b>	<b>0</b>	<b>1035</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>714</b>	<b>4</b>	<b>0</b>	<b>718</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1754</b>	<b>0</b>
17:00	0	299	0	0	299	0	0	0	0	0	0	191	0	0	191	0	0	0	0	0	490	0
17:15	2	335	0	0	337	0	0	0	0	0	0	208	0	0	208	0	0	0	0	0	545	0
17:30	1	270	0	0	271	0	0	0	0	0	0	210	0	0	210	0	0	0	0	0	481	0
17:45	0	278	0	0	278	1	0	0	0	1	0	211	0	0	211	0	0	0	0	0	490	0
<b>Total</b>	<b>3</b>	<b>1182</b>	<b>0</b>	<b>0</b>	<b>1185</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>820</b>	<b>0</b>	<b>0</b>	<b>820</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2006</b>	<b>0</b>
<b>Grand Total</b>	<b>6</b>	<b>5400</b>	<b>0</b>	<b>1</b>	<b>5407</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>5672</b>	<b>12</b>	<b>0</b>	<b>5684</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11096</b>	<b>1</b>
<b>Apprch %</b>	<b>0.1%</b>	<b>99.9%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>60.0%</b>	<b>0.0%</b>	<b>40.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>99.8%</b>	<b>0.2%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>
<b>Total %</b>	<b>0.1%</b>	<b>48.7%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>48.7%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>51.1%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>51.2%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>

AM PEAK HOUR	Alpine Road Southbound					Wildwood Lane(South) Westbound					Alpine Road Northbound					Wildwood Lane(South) Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 07:30 to 08:30																						
Peak Hour For Entire Intersection Begins at 07:30																						
7:30	0	162	0	0	162	0	0	0	0	0	0	358	0	0	358	0	0	0	0	0	520	0
7:45	0	168	0	0	168	0	0	0	0	0	0	373	1	0	374	0	0	0	0	0	542	0
8:00	0	174	0	0	174	1	0	0	0	1	0	356	1	0	357	0	0	0	0	0	532	0
8:15	0	145	0	0	145	0	0	0	0	0	0	346	0	0	346	0	0	0	0	0	491	0
<b>Total Volume</b>	<b>0</b>	<b>649</b>	<b>0</b>	<b>0</b>	<b>649</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1433</b>	<b>2</b>	<b>0</b>	<b>1435</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2085</b>	<b>0</b>
<b>% App Total</b>	<b>0.0%</b>	<b>100.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>99.9%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>
<b>PHF</b>	<b>.000</b>	<b>.932</b>	<b>.000</b>	<b>.000</b>	<b>.932</b>	<b>.250</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.250</b>	<b>.000</b>	<b>.960</b>	<b>.500</b>	<b>.000</b>	<b>.959</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.962</b>

NOON PEAK HOUR	Alpine Road Southbound					Wildwood Lane(South) Westbound					Alpine Road Northbound					Wildwood Lane(South) Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 14:30 to 15:30																						
Peak Hour For Entire Intersection Begins at 14:30																						
14:30	1	261	0	1	263	0	0	1	0	1	0	200	0	0	200	0	0	0	0	0	464	1
14:45	0	273	0	0	273	0	0	0	0	0	0	178	1	0	179	0	0	0	0	0	452	0
15:00	0	305	0	0	305	0	0	0	0	0	0	165	0	0	165	0	0	0	0	0	470	0
15:15	0	256	0	0	256	0	0	0	0	0	0	156	1	0	157	0	0	0	0	0	413	0
<b>Total Volume</b>	<b>1</b>	<b>1095</b>	<b>0</b>	<b>1</b>	<b>1097</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>699</b>	<b>2</b>	<b>0</b>	<b>701</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1799</b>	<b>1</b>
<b>% App Total</b>	<b>0.1%</b>	<b>99.9%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>99.7%</b>	<b>0.3%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>
<b>PHF</b>	<b>.250</b>	<b>.898</b>	<b>.000</b>	<b>.250</b>	<b>.899</b>	<b>.000</b>	<b>.000</b>	<b>.250</b>	<b>.000</b>	<b>.250</b>	<b>.000</b>	<b>.874</b>	<b>.500</b>	<b>.000</b>	<b>.876</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.957</b>

PM PEAK HOUR	Alpine Road Southbound					Wildwood Lane(South) Westbound					Alpine Road Northbound					Wildwood Lane(South) Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 17:00 to 18:00																						
Peak Hour For Entire Intersection Begins at 17:00																						
17:00	0	299	0	0	299	0	0	0	0	0	0	191	0	0	191	0	0	0	0	0	490	0
17:15	2	335	0	0	337	0	0	0	0	0	0	208	0	0	208	0	0	0	0	0	545	0
17:30	1	270	0	0	271	0	0	0	0	0	0	210	0	0	210	0	0	0	0	0	481	0
17:45	0	278	0	0	278	1	0	0	0	1	0	211	0	0	211	0	0	0	0	0	490	0
<b>Total Volume</b>	<b>3</b>	<b>1182</b>	<b>0</b>	<b>0</b>	<b>1185</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>820</b>	<b>0</b>	<b>0</b>	<b>820</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2006</b>	<b>0</b>
<b>% App Total</b>	<b>0.3%</b>	<b>99.7%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.3%</b>	<b>100.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>

# ALL TRAFFIC DATA

San Mateo County  
 All Vehicles & Turns On Unshifted  
 Bikes & Peds On Bank 1  
 Nothing On Bank 2

(916) 771-8700  
[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 15-7794-006 Alpine Road & Bishop Lane  
 Date : 10/21/2015

## Unshifted Count = All Vehicles & Turns

START TIME	Alpine Road Southbound					Bishop Lane Westbound					Alpine Road Northbound					Bishop Lane Eastbound					Total	Utms Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	1	86	0	0	87	2	0	3	0	5	0	291	1	0	292	0	0	0	0	0	384	0
7:15	0	99	0	0	99	2	0	2	0	4	0	350	1	0	351	0	0	0	0	0	454	0
7:30	0	162	0	0	162	4	0	1	0	5	0	361	1	0	362	0	0	0	0	0	529	0
7:45	0	175	0	0	175	2	0	6	0	8	0	365	2	0	367	0	0	0	0	0	550	0
<b>Total</b>	<b>1</b>	<b>522</b>	<b>0</b>	<b>0</b>	<b>523</b>	<b>10</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>1367</b>	<b>5</b>	<b>0</b>	<b>1372</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1917</b>	<b>0</b>
8:00	1	169	0	0	170	3	0	4	0	7	0	349	2	0	351	0	0	0	0	0	528	0
8:15	3	141	0	0	144	3	0	4	0	7	0	342	0	0	342	0	0	0	0	0	493	0
8:30	2	123	0	0	125	1	0	12	0	13	0	333	0	0	333	0	0	0	0	0	471	0
8:45	5	144	0	0	149	5	0	4	0	9	0	340	5	0	345	0	0	0	0	0	503	0
<b>Total</b>	<b>11</b>	<b>577</b>	<b>0</b>	<b>0</b>	<b>588</b>	<b>12</b>	<b>0</b>	<b>24</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>1364</b>	<b>7</b>	<b>0</b>	<b>1371</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1995</b>	<b>0</b>
14:00	2	213	0	0	215	3	0	1	0	4	0	168	3	0	171	0	0	0	0	0	390	0
14:15	0	208	0	0	208	0	0	1	0	1	0	185	0	0	185	0	0	0	0	0	394	0
14:30	3	256	0	0	259	1	0	5	0	6	0	188	1	0	189	0	0	0	0	0	454	0
14:45	6	272	0	0	278	2	0	1	0	3	0	190	2	0	192	0	0	0	0	0	463	0
<b>Total</b>	<b>11</b>	<b>949</b>	<b>0</b>	<b>0</b>	<b>960</b>	<b>6</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>721</b>	<b>6</b>	<b>0</b>	<b>727</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1701</b>	<b>0</b>
15:00	2	292	0	0	294	4	0	3	0	7	0	167	1	0	168	0	0	0	0	0	469	0
15:15	2	251	0	0	253	5	0	2	0	7	0	148	2	0	150	0	0	0	0	0	410	0
15:30	5	274	0	0	279	0	0	3	0	3	0	176	4	0	180	0	0	0	0	0	462	0
15:45	3	272	0	0	275	3	0	0	0	3	0	170	0	0	170	0	0	0	0	0	448	0
<b>Total</b>	<b>12</b>	<b>1089</b>	<b>0</b>	<b>0</b>	<b>1101</b>	<b>12</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>661</b>	<b>7</b>	<b>0</b>	<b>668</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1789</b>	<b>0</b>
16:00	3	238	0	0	241	2	0	5	0	7	0	173	4	0	177	0	0	0	0	0	425	0
16:15	1	263	0	0	264	5	0	4	0	9	0	156	5	0	161	0	0	0	0	0	434	0
16:30	3	274	0	0	277	1	0	1	0	2	0	167	2	0	169	0	0	0	0	0	448	0
16:45	0	264	0	0	264	2	0	7	0	9	0	197	2	0	199	0	0	0	0	0	472	0
<b>Total</b>	<b>7</b>	<b>1039</b>	<b>0</b>	<b>0</b>	<b>1046</b>	<b>10</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>693</b>	<b>13</b>	<b>0</b>	<b>706</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1779</b>	<b>0</b>
17:00	3	292	0	0	295	1	0	2	0	3	0	195	1	0	196	0	0	0	0	0	494	0
17:15	4	334	0	0	338	2	0	2	0	4	0	204	2	0	206	0	0	0	0	0	548	0
17:30	2	266	0	0	268	0	0	6	0	6	0	204	8	0	212	0	0	0	0	0	486	0
17:45	4	276	0	0	280	3	0	3	0	6	0	212	7	0	219	0	0	0	0	0	505	0
<b>Total</b>	<b>13</b>	<b>1168</b>	<b>0</b>	<b>0</b>	<b>1181</b>	<b>6</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>815</b>	<b>18</b>	<b>0</b>	<b>833</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2033</b>	<b>0</b>
<b>Grand Total</b>	<b>55</b>	<b>5344</b>	<b>0</b>	<b>0</b>	<b>5399</b>	<b>56</b>	<b>0</b>	<b>82</b>	<b>0</b>	<b>138</b>	<b>0</b>	<b>5621</b>	<b>56</b>	<b>0</b>	<b>5677</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11214</b>	<b>0</b>
<b>Apprch %</b>	<b>1.0%</b>	<b>99.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>48.1%</b>	<b>40.6%</b>	<b>0.0%</b>	<b>59.4%</b>	<b>0.0%</b>	<b>1.2%</b>	<b>0.0%</b>	<b>99.0%</b>	<b>1.0%</b>	<b>0.0%</b>	<b>50.6%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>	<b>0</b>
<b>Total %</b>	<b>0.5%</b>	<b>47.7%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>48.1%</b>	<b>0.5%</b>	<b>0.0%</b>	<b>0.7%</b>	<b>0.0%</b>	<b>1.2%</b>	<b>0.0%</b>	<b>50.1%</b>	<b>0.5%</b>	<b>0.0%</b>	<b>50.6%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>	<b>0</b>

START TIME	Alpine Road Southbound					Bishop Lane Westbound					Alpine Road Northbound					Bishop Lane Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	162	0	0	162	4	0	1	0	5	0	361	1	0	362	0	0	0	0	0	529
7:45	0	175	0	0	175	2	0	6	0	8	0	365	2	0	367	0	0	0	0	0	550
8:00	1	169	0	0	170	3	0	4	0	7	0	349	2	0	351	0	0	0	0	0	528
8:15	3	141	0	0	144	3	0	4	0	7	0	342	0	0	342	0	0	0	0	0	493
<b>Total Volume</b>	<b>4</b>	<b>647</b>	<b>0</b>	<b>0</b>	<b>651</b>	<b>12</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>1417</b>	<b>5</b>	<b>0</b>	<b>1422</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2100</b>
<b>% App Total</b>	<b>0.6%</b>	<b>99.4%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>44.4%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>55.6%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>99.6%</b>	<b>0.4%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>
<b>PHF</b>	<b>.333</b>	<b>.924</b>	<b>.000</b>	<b>.000</b>	<b>.930</b>	<b>.750</b>	<b>.000</b>	<b>.625</b>	<b>.000</b>	<b>.844</b>	<b>.000</b>	<b>.971</b>	<b>.625</b>	<b>.000</b>	<b>.969</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.955</b>

START TIME	Alpine Road Southbound					Bishop Lane Westbound					Alpine Road Northbound					Bishop Lane Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 14:45 to 15:45																					
Peak Hour For Entire Intersection Begins at 14:45																					
14:45	6	272	0	0	278	2	0	1	0	3	0	180	2	0	182	0	0	0	0	0	463
15:00	2	292	0	0	294	4	0	3	0	7	0	167	1	0	168	0	0	0	0	0	469
15:15	2	251	0	0	253	5	0	2	0	7	0	148	2	0	150	0	0	0	0	0	410
15:30	5	274	0	0	279	0	0	3	0	3	0	176	4	0	180	0	0	0	0	0	462
<b>Total Volume</b>	<b>15</b>	<b>1089</b>	<b>0</b>	<b>0</b>	<b>1104</b>	<b>11</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>671</b>	<b>9</b>	<b>0</b>	<b>680</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1804</b>
<b>% App Total</b>	<b>1.4%</b>	<b>98.6%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>55.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>45.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>98.7%</b>	<b>1.3%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>
<b>PHF</b>	<b>.625</b>	<b>.932</b>	<b>.000</b>	<b>.000</b>	<b>.939</b>	<b>.550</b>	<b>.000</b>	<b>.750</b>	<b>.000</b>	<b>.714</b>	<b>.000</b>	<b>.932</b>	<b>.563</b>	<b>.000</b>	<b>.934</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.962</b>

START TIME	Alpine Road Southbound					Bishop Lane Westbound					Alpine Road Northbound					Bishop Lane Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	3	292	0	0	295	1	0	2	0	3	0	195	1	0	196	0	0	0	0	0	494
17:15	4	334	0	0	338	2	0	2	0	4	0	204	2	0	206	0	0	0	0	0	548
17:30	2	266	0	0	268	0	0	6	0	6	0	204	8	0	212	0	0	0	0	0	486
17:45	4	276	0	0																	

# ALL TRAFFIC DATA

San Mateo County  
 All Vehicles & Turns On Unshifted  
 Bikes & Peds On Bank 1  
 Nothing On Bank 2

(916) 771-8700  
[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 15-7794-007 Alpine Road & Piers Lane/ Alpine Access Road  
 Date : 10/21/2015

## Unshifted Count = All Vehicles & Turns

START TIME	Alpine Road Southbound					Piers Lane/ Alpine Access Road Westbound					Alpine Road Northbound					Piers Lane/ Alpine Access Road Eastbound					Total	Utums Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL			
7:00	0	86	3	1	90	0	0	0	0	0	20	287	0	0	307	0	0	0	0	0	0	397	1
7:15	0	97	3	0	100	0	0	0	0	0	21	362	0	0	383	0	0	1	0	1	0	484	0
7:30	1	153	3	0	157	0	0	0	0	0	30	359	0	0	389	1	0	0	0	1	1	547	0
7:45	0	163	7	0	170	0	0	1	0	1	27	354	0	0	381	0	0	0	0	0	0	552	0
<b>Total</b>	<b>1</b>	<b>499</b>	<b>16</b>	<b>1</b>	<b>517</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>98</b>	<b>1362</b>	<b>0</b>	<b>0</b>	<b>1460</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>1980</b>	<b>1</b>	
8:00	0	170	5	0	175	1	0	1	0	2	20	345	0	0	365	1	0	3	0	4	5	511	0
8:15	1	134	7	0	142	0	0	1	0	1	21	341	0	1	363	0	0	5	0	5	4	485	0
8:30	0	124	7	0	131	0	0	0	0	0	21	329	0	0	350	1	0	3	0	4	4	485	0
8:45	0	136	8	0	144	0	0	0	0	0	41	347	1	0	389	2	0	2	0	4	4	537	0
<b>Total</b>	<b>1</b>	<b>564</b>	<b>27</b>	<b>0</b>	<b>592</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>103</b>	<b>1362</b>	<b>1</b>	<b>1</b>	<b>1467</b>	<b>4</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>17</b>	<b>2079</b>	<b>1</b>	
14:00	0	215	2	0	217	0	0	0	0	0	7	174	0	0	181	3	0	13	0	16	16	414	0
14:15	0	206	4	0	210	0	0	0	0	0	4	180	0	0	184	1	0	14	0	15	15	409	0
14:30	0	248	4	0	252	0	0	2	0	2	3	182	2	0	187	6	0	22	0	28	28	469	0
14:45	1	270	4	0	275	0	0	1	0	1	7	175	0	0	182	3	0	14	0	17	17	475	0
<b>Total</b>	<b>1</b>	<b>939</b>	<b>14</b>	<b>0</b>	<b>954</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>21</b>	<b>711</b>	<b>2</b>	<b>0</b>	<b>734</b>	<b>13</b>	<b>0</b>	<b>63</b>	<b>0</b>	<b>76</b>	<b>1767</b>	<b>0</b>	
15:00	0	280	7	0	287	0	0	0	0	0	6	165	0	0	171	2	0	32	0	34	34	492	0
15:15	0	245	6	0	251	1	0	1	0	2	4	150	0	0	154	1	0	40	0	41	41	448	0
15:30	1	267	5	0	273	0	0	0	0	0	16	177	0	0	193	4	0	24	0	28	28	494	0
15:45	0	270	3	0	273	0	0	0	0	0	9	157	2	0	168	7	0	24	0	31	31	472	0
<b>Total</b>	<b>1</b>	<b>1062</b>	<b>21</b>	<b>0</b>	<b>1084</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>35</b>	<b>649</b>	<b>2</b>	<b>0</b>	<b>686</b>	<b>14</b>	<b>0</b>	<b>120</b>	<b>0</b>	<b>134</b>	<b>1906</b>	<b>0</b>	
16:00	2	227	2	1	232	0	0	0	0	0	12	174	0	0	186	5	1	24	0	30	448	1	
16:15	2	274	1	0	277	1	0	1	0	2	6	153	2	0	161	5	0	28	0	33	33	473	0
16:30	0	280	9	0	289	0	0	1	0	1	4	166	0	0	170	5	0	20	0	25	25	485	0
16:45	1	259	1	0	261	0	0	0	0	0	4	182	0	1	187	15	0	26	0	41	41	489	1
<b>Total</b>	<b>5</b>	<b>1040</b>	<b>13</b>	<b>1</b>	<b>1059</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>26</b>	<b>675</b>	<b>2</b>	<b>1</b>	<b>704</b>	<b>30</b>	<b>1</b>	<b>98</b>	<b>0</b>	<b>129</b>	<b>1895</b>	<b>2</b>	
17:00	1	295	5	0	301	0	0	1	0	1	4	201	0	0	205	4	0	21	0	25	25	532	0
17:15	0	326	2	0	328	1	0	2	0	3	4	196	1	0	201	3	0	36	0	39	39	571	0
17:30	1	272	1	0	274	0	0	0	0	0	4	209	0	0	213	5	0	19	0	24	24	511	0
17:45	1	278	1	0	280	1	0	0	0	1	2	211	0	0	213	5	0	28	0	33	33	527	0
<b>Total</b>	<b>3</b>	<b>1171</b>	<b>9</b>	<b>0</b>	<b>1183</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>14</b>	<b>817</b>	<b>1</b>	<b>0</b>	<b>832</b>	<b>17</b>	<b>0</b>	<b>104</b>	<b>0</b>	<b>121</b>	<b>2141</b>	<b>0</b>	
<b>Grand Total</b>	<b>12</b>	<b>5275</b>	<b>100</b>	<b>2</b>	<b>5389</b>	<b>5</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>17</b>	<b>297</b>	<b>5576</b>	<b>8</b>	<b>2</b>	<b>5883</b>	<b>79</b>	<b>1</b>	<b>399</b>	<b>0</b>	<b>479</b>	<b>11768</b>	<b>4</b>	
<b>Apprch %</b>	<b>0.2%</b>	<b>97.9%</b>	<b>1.9%</b>	<b>0.0%</b>	<b>45.8%</b>	<b>29.4%</b>	<b>0.0%</b>	<b>70.6%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>5.0%</b>	<b>94.8%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>50.0%</b>	<b>16.5%</b>	<b>0.2%</b>	<b>83.3%</b>	<b>0.0%</b>	<b>4.1%</b>	<b>100.0%</b>		
<b>Total %</b>	<b>0.1%</b>	<b>44.8%</b>	<b>0.8%</b>	<b>0.0%</b>	<b>45.8%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>2.5%</b>	<b>47.4%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>50.0%</b>	<b>0.7%</b>	<b>0.0%</b>	<b>3.4%</b>	<b>0.0%</b>	<b>4.1%</b>	<b>100.0%</b>		

AM PEAK HOUR	Alpine Road Southbound					Piers Lane/ Alpine Access Road Westbound					Alpine Road Northbound					Piers Lane/ Alpine Access Road Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	1	153	3	0	157	0	0	0	0	0	30	359	0	0	389	1	0	0	0	1	547
7:45	0	163	7	0	170	0	0	1	0	1	27	354	0	0	381	0	0	0	0	0	552
8:00	0	170	5	0	175	1	0	1	0	2	20	345	0	0	365	1	0	3	0	4	511
8:15	1	134	7	0	142	0	0	1	0	1	21	341	0	1	363	0	0	5	0	5	511
<b>Total Volume</b>	<b>2</b>	<b>620</b>	<b>22</b>	<b>0</b>	<b>644</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>98</b>	<b>1399</b>	<b>0</b>	<b>1</b>	<b>1498</b>	<b>2</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>10</b>	<b>2156</b>
<b>% App Total</b>	<b>0.3%</b>	<b>96.3%</b>	<b>3.4%</b>	<b>0.0%</b>	<b>25.0%</b>	<b>0.0%</b>	<b>75.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>6.5%</b>	<b>93.4%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>20.0%</b>	<b>0.0%</b>	<b>80.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		
<b>PHF</b>	<b>.500</b>	<b>.912</b>	<b>.786</b>	<b>.000</b>	<b>.920</b>	<b>.250</b>	<b>.000</b>	<b>.750</b>	<b>.000</b>	<b>.500</b>	<b>.817</b>	<b>.974</b>	<b>.000</b>	<b>.250</b>	<b>.963</b>	<b>.500</b>	<b>.000</b>	<b>.400</b>	<b>.000</b>	<b>.500</b>	<b>.976</b>

NOON PEAK HOUR	Alpine Road Southbound					Piers Lane/ Alpine Access Road Westbound					Alpine Road Northbound					Piers Lane/ Alpine Access Road Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 14:45 to 15:45																					
Peak Hour For Entire Intersection Begins at 14:45																					
14:45	1	270	4	0	275	0	0	1	0	1	7	175	0	0	182	3	0	14	0	17	475
15:00	0	280	7	0	287	0	0	0	0	0	6	165	0	0	171	2	0	32	0	34	492
15:15	0	245	6	0	251	1	0	1	0	2	4	150	0	0	154	1	0	40	0	41	448
15:30	1	267	5	0	273	0	0	0	0	0	16	177	0	0	193	4	0	24	0	28	494
<b>Total Volume</b>	<b>2</b>	<b>1062</b>	<b>22</b>	<b>0</b>	<b>1086</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>33</b>	<b>667</b>	<b>0</b>	<b>0</b>	<b>700</b>	<b>10</b>	<b>0</b>	<b>110</b>	<b>0</b>	<b>120</b>	<b>1909</b>
<b>% App Total</b>	<b>0.2%</b>	<b>97.8%</b>	<b>2.0%</b>	<b>0.0%</b>	<b>33.3%</b>	<b>0.0%</b>	<b>66.7%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>4.7%</b>	<b>95.3%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>8.3%</b>	<b>0.0%</b>	<b>91.7%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>		
<b>PHF</b>	<b>.500</b>	<b>.948</b>	<b>.786</b>	<b>.000</b>	<b>.946</b>	<b>.250</b>	<b>.000</b>	<b>.500</b>	<b>.000</b>	<b>.375</b>	<b>.516</b>	<b>.942</b>	<b>.000</b>	<b>.000</b>	<b>.907</b>	<b>.625</b>	<b>.000</b>	<b>.688</b>	<b>.000</b>	<b>.732</b>	<b>.966</b>

PM PEAK HOUR	Alpine Road Southbound					Piers Lane/ Alpine Access Road Westbound					Alpine Road Northbound					Piers Lane/ Alpine Access Road Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	1	295	5	0	301	0	0	1	0	1	4	201	0	0	205	4	0	21	0	25	532
17:15	0	326	2	0	328	1	0	2	0	3	4	196	1	0	201	3	0	36	0	39	571
17:30	1	272	1	0	274	0	0	0	0	0	4	209	0	0	213	5	0	19	0	24	511
17:45	1	278	1	0	280	1	0	0	0	1	2	211	0	0	213	5	0	28	0	33	527
<b>Total Volume</b>	<b>3</b>	<b>1171</b>	<b>9</b>	<b>0</b>	<b>1183</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>14</b>	<b>817</b>	<b>1</b>	<b>0</b>	<b>832</b>	<b>17</b>	<b>0</b>	<b>104</b>	<b>0</b>	<b>121</b>	<b>2141</b>
<b>% App Total</b>	<b>0.3%</b>	<b>99.0%</b>	<b>0.8%</b>	<b>0.0%</b>	<b>40.0%</b>	<b>0.0%</b>	<b>60.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>1.7%</b>	<b>98.2%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>14.0%</b>	<b>0.0%</b>	<					

# ALL TRAFFIC DATA

San Mateo County  
All Vehicles & Turns On Unshifted  
Bikes & Peds On Bank 1  
Nothing On Bank 2

(916) 771-8700  
[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 15-7794-008 Alpine Road & I-280 NB Ramps  
Date : 10/21/2015

## Unshifted Count = All Vehicles & Turns

START TIME	Alpine Road Southbound					I-280 NB Ramps Westbound					Alpine Road Northbound					I-280 NB Ramps Eastbound					Total	Utums Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	0	86	14	0	80	45	0	224	0	269	40	87	0	0	127	0	0	0	0	0	476	0
7:15	0	87	8	0	95	65	2	254	0	321	46	126	0	0	172	0	0	0	0	0	588	0
7:30	0	132	6	0	138	72	0	237	0	309	63	161	0	0	224	0	0	0	0	0	671	0
7:45	0	184	9	0	193	72	0	221	0	293	58	174	0	0	232	0	0	0	0	0	718	0
<b>Total</b>	<b>0</b>	<b>469</b>	<b>37</b>	<b>0</b>	<b>506</b>	<b>254</b>	<b>2</b>	<b>936</b>	<b>0</b>	<b>1192</b>	<b>207</b>	<b>548</b>	<b>0</b>	<b>0</b>	<b>755</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2453</b>	<b>0</b>
8:00	0	167	11	0	178	78	1	186	0	265	58	175	0	0	233	0	0	0	0	0	676	0
8:15	0	119	12	0	131	59	1	184	0	244	84	186	0	1	271	0	0	0	0	0	646	1
8:30	0	121	15	0	136	45	0	189	0	234	78	155	0	0	233	0	0	0	0	0	603	0
8:45	0	122	9	0	131	57	1	209	0	267	58	173	0	0	231	0	0	0	0	0	629	0
<b>Total</b>	<b>0</b>	<b>529</b>	<b>47</b>	<b>0</b>	<b>576</b>	<b>239</b>	<b>3</b>	<b>768</b>	<b>0</b>	<b>1010</b>	<b>278</b>	<b>689</b>	<b>0</b>	<b>1</b>	<b>968</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2554</b>	<b>1</b>
14:00	0	189	28	0	217	41	0	114	0	155	56	70	0	1	127	0	0	0	0	0	499	1
14:15	0	202	31	0	233	40	0	109	0	149	40	76	0	0	116	0	0	0	0	0	498	0
14:30	0	249	31	0	280	40	0	120	0	160	53	76	0	1	130	0	0	0	0	0	570	1
14:45	0	244	32	0	276	49	0	106	0	155	52	61	0	1	114	0	0	0	0	0	545	1
<b>Total</b>	<b>0</b>	<b>884</b>	<b>122</b>	<b>0</b>	<b>1006</b>	<b>170</b>	<b>0</b>	<b>449</b>	<b>0</b>	<b>619</b>	<b>201</b>	<b>283</b>	<b>0</b>	<b>3</b>	<b>487</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2112</b>	<b>3</b>
15:00	0	237	43	0	280	57	0	89	0	146	93	86	0	0	179	0	0	0	0	0	605	0
15:15	0	248	47	0	295	54	0	83	0	137	85	75	0	0	160	0	0	0	0	0	592	0
15:30	0	259	38	0	297	36	0	105	0	141	75	83	0	0	158	0	0	0	0	0	596	0
15:45	0	241	44	0	285	58	1	91	0	150	72	71	0	0	143	0	0	0	0	0	578	0
<b>Total</b>	<b>0</b>	<b>985</b>	<b>172</b>	<b>0</b>	<b>1157</b>	<b>205</b>	<b>1</b>	<b>368</b>	<b>0</b>	<b>574</b>	<b>325</b>	<b>315</b>	<b>0</b>	<b>0</b>	<b>640</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2371</b>	<b>0</b>
16:00	0	222	44	0	266	53	0	86	0	139	109	101	0	1	211	0	0	0	0	0	616	1
16:15	0	232	76	0	308	47	0	75	0	122	87	90	0	0	177	0	0	0	0	0	607	0
16:30	0	238	87	0	325	47	0	103	0	150	74	71	0	0	145	0	0	0	0	0	620	0
16:45	0	213	82	0	295	39	1	97	0	137	67	96	0	0	163	0	0	0	0	0	595	0
<b>Total</b>	<b>0</b>	<b>905</b>	<b>289</b>	<b>0</b>	<b>1194</b>	<b>186</b>	<b>1</b>	<b>361</b>	<b>0</b>	<b>548</b>	<b>337</b>	<b>358</b>	<b>0</b>	<b>1</b>	<b>696</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2438</b>	<b>1</b>
17:00	0	228	85	0	313	49	0	108	0	157	60	88	0	0	148	0	0	0	0	0	618	0
17:15	0	239	121	0	360	53	1	102	0	156	49	101	0	0	150	0	0	0	0	0	666	0
17:30	0	211	84	0	295	59	4	98	0	161	64	116	0	0	180	0	0	0	0	0	636	0
17:45	0	206	91	0	297	60	6	136	0	202	43	77	0	2	122	0	0	0	0	0	621	2
<b>Total</b>	<b>0</b>	<b>884</b>	<b>381</b>	<b>0</b>	<b>1265</b>	<b>221</b>	<b>11</b>	<b>444</b>	<b>0</b>	<b>676</b>	<b>216</b>	<b>382</b>	<b>0</b>	<b>2</b>	<b>600</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2541</b>	<b>2</b>
<b>Grand Total</b>	<b>0</b>	<b>4656</b>	<b>1048</b>	<b>0</b>	<b>5704</b>	<b>1275</b>	<b>18</b>	<b>3326</b>	<b>0</b>	<b>4619</b>	<b>1564</b>	<b>2575</b>	<b>0</b>	<b>7</b>	<b>4146</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14469</b>	<b>7</b>
Apprch %	0.0%	81.6%	18.4%	0.0%	39.4%	8.8%	0.1%	23.0%	0.0%	31.9%	10.8%	17.8%	0.0%	0.0%	28.7%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	
Total %	0.0%	32.2%	7.2%	0.0%	39.4%	8.8%	0.1%	23.0%	0.0%	31.9%	10.8%	17.8%	0.0%	0.0%	28.7%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	Alpine Road Southbound					I-280 NB Ramps Westbound					Alpine Road Northbound					I-280 NB Ramps Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	132	6	0	138	72	0	237	0	309	63	161	0	0	224	0	0	0	0	0	671
7:45	0	184	9	0	193	72	0	221	0	293	58	174	0	0	232	0	0	0	0	0	718
8:00	0	167	11	0	178	78	1	186	0	265	58	175	0	0	233	0	0	0	0	0	676
8:15	0	119	12	0	131	59	1	184	0	244	84	186	0	1	271	0	0	0	0	0	646
<b>Total Volume</b>	<b>0</b>	<b>602</b>	<b>38</b>	<b>0</b>	<b>640</b>	<b>281</b>	<b>2</b>	<b>828</b>	<b>0</b>	<b>1111</b>	<b>263</b>	<b>696</b>	<b>0</b>	<b>1</b>	<b>960</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2711</b>
% App Total	0.0%	94.1%	5.9%	0.0%	39.4%	25.3%	0.2%	74.5%	0.0%	31.9%	27.4%	72.5%	0.0%	0.1%	28.7%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
PHF	.000	.818	.792	.000	.829	.901	.500	.873	.000	.899	.783	.935	.000	.250	.886	.000	.000	.000	.000	.000	.944

NOON PEAK HOUR	Alpine Road Southbound					I-280 NB Ramps Westbound					Alpine Road Northbound					I-280 NB Ramps Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 15:00 to 16:00																					
Peak Hour For Entire Intersection Begins at 15:00																					
15:00	0	237	43	0	280	57	0	89	0	146	93	86	0	0	179	0	0	0	0	0	605
15:15	0	248	47	0	295	54	0	83	0	137	85	75	0	0	160	0	0	0	0	0	592
15:30	0	259	38	0	297	36	0	105	0	141	75	83	0	0	158	0	0	0	0	0	596
15:45	0	241	44	0	285	58	1	91	0	150	72	71	0	0	143	0	0	0	0	0	578
<b>Total Volume</b>	<b>0</b>	<b>985</b>	<b>172</b>	<b>0</b>	<b>1157</b>	<b>205</b>	<b>1</b>	<b>368</b>	<b>0</b>	<b>574</b>	<b>325</b>	<b>315</b>	<b>0</b>	<b>0</b>	<b>640</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2371</b>
% App Total	0.0%	85.1%	14.9%	0.0%	39.4%	35.7%	0.2%	64.1%	0.0%	31.9%	50.8%	49.2%	0.0%	0.0%	28.7%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
PHF	.000	.951	.915	.000	.974	.884	.250	.876	.000	.957	.874	.916	.000	.000	.894	.000	.000	.000	.000	.000	.980

PM PEAK HOUR	Alpine Road Southbound					I-280 NB Ramps Westbound					Alpine Road Northbound					I-280 NB Ramps Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	228	85	0	313	49	0	108	0	157	60	88	0	0	148	0	0	0	0	0	618
17:15	0	239	121	0	360	53	1	102	0	156	49	101	0	0	150	0	0	0	0	0	666
17:30	0	211	84	0	295	59	4	98	0	161	64	116	0	0	180	0	0	0	0	0	636
17:45	0	206	91	0	297	60	6	136	0	202	43	77	0	2	122	0	0	0	0	0	621
<b>Total Volume</b>	<b>0</b>	<b>884</b>	<b>381</b> </																		

# ALL TRAFFIC DATA

San Mateo County  
 All Vehicles & Turns On Unshifted  
 Bikes & Peds On Bank 1  
 Nothing On Bank 2

(916) 771-8700  
[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 15-7794-009 Alpine Road & I-280 SB Ramps  
 Date : 10/21/2015

## Unshifted Count = All Vehicles & Turns

START TIME	Alpine Road Southbound					I-280 SB Ramps Westbound					Alpine Road Northbound					I-280 SB Ramps Eastbound					Total	Utums Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	0	67	46	0	113	0	0	0	0	0	0	74	37	0	111	50	0	49	0	99	323	0
7:15	0	88	54	0	142	0	0	0	0	0	0	106	30	0	136	68	0	79	0	147	425	0
7:30	0	109	95	0	204	0	0	0	0	0	0	146	44	0	190	74	0	78	0	152	546	0
7:45	0	134	119	1	254	0	0	0	0	0	0	132	34	0	166	97	0	117	0	214	634	1
<b>Total</b>	<b>0</b>	<b>398</b>	<b>314</b>	<b>1</b>	<b>713</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>458</b>	<b>145</b>	<b>0</b>	<b>603</b>	<b>289</b>	<b>0</b>	<b>323</b>	<b>0</b>	<b>612</b>	<b>1928</b>	<b>1</b>
8:00	0	147	97	0	244	0	0	0	0	0	0	143	41	0	184	91	0	137	0	228	656	0
8:15	0	111	75	0	186	0	0	0	0	0	0	178	62	0	240	88	0	106	0	194	620	0
8:30	0	89	69	0	158	0	0	0	0	0	0	160	45	0	205	75	0	94	0	169	532	0
8:45	0	123	65	0	188	0	0	0	0	0	0	154	33	0	187	80	0	87	0	167	542	0
<b>Total</b>	<b>0</b>	<b>470</b>	<b>306</b>	<b>0</b>	<b>776</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>635</b>	<b>181</b>	<b>0</b>	<b>816</b>	<b>334</b>	<b>0</b>	<b>424</b>	<b>0</b>	<b>758</b>	<b>2350</b>	<b>0</b>
14:00	0	105	114	0	219	0	0	0	0	0	0	115	42	0	157	17	0	38	0	55	431	0
14:15	0	101	144	0	245	0	0	0	0	0	0	103	48	0	151	12	0	54	0	66	462	0
14:30	0	102	184	0	286	0	0	0	0	0	0	115	41	0	156	18	0	64	0	82	524	0
14:45	0	110	183	0	293	0	0	0	0	0	0	100	44	0	144	12	0	70	0	82	519	0
<b>Total</b>	<b>0</b>	<b>418</b>	<b>625</b>	<b>0</b>	<b>1043</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>433</b>	<b>175</b>	<b>0</b>	<b>608</b>	<b>59</b>	<b>0</b>	<b>226</b>	<b>0</b>	<b>285</b>	<b>1936</b>	<b>0</b>
15:00	0	124	176	0	300	0	0	0	0	0	0	172	52	0	224	13	0	59	0	72	596	0
15:15	0	112	188	0	300	0	0	0	0	0	0	145	68	0	213	10	0	62	0	72	585	0
15:30	0	131	162	0	293	0	0	0	0	0	0	143	43	0	186	17	0	66	0	83	562	0
15:45	0	140	166	1	307	0	0	0	0	0	0	136	69	0	205	11	0	70	0	81	593	1
<b>Total</b>	<b>0</b>	<b>507</b>	<b>692</b>	<b>1</b>	<b>1200</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>596</b>	<b>232</b>	<b>0</b>	<b>828</b>	<b>51</b>	<b>0</b>	<b>257</b>	<b>0</b>	<b>308</b>	<b>2336</b>	<b>1</b>
16:00	0	130	150	0	280	0	0	0	0	0	0	193	61	0	254	15	0	60	0	75	609	0
16:15	0	120	156	1	277	0	0	0	0	0	0	159	44	0	203	13	0	63	0	76	556	1
16:30	0	135	154	0	289	0	0	0	0	0	0	128	63	0	191	16	0	64	0	80	560	0
16:45	0	120	139	0	259	0	0	0	0	0	0	151	35	0	186	9	0	53	0	62	507	0
<b>Total</b>	<b>0</b>	<b>505</b>	<b>599</b>	<b>1</b>	<b>1105</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>631</b>	<b>203</b>	<b>0</b>	<b>834</b>	<b>53</b>	<b>0</b>	<b>240</b>	<b>0</b>	<b>293</b>	<b>2232</b>	<b>1</b>
17:00	0	146	129	0	275	0	0	0	0	0	0	137	29	0	166	13	0	61	0	74	515	0
17:15	0	151	134	0	285	0	0	0	0	0	0	133	33	0	166	18	0	56	0	74	525	0
17:30	0	149	122	0	271	0	0	0	0	0	0	162	31	0	193	17	0	57	0	74	538	0
17:45	0	140	138	2	280	0	0	0	0	0	0	98	59	0	157	23	0	68	0	91	528	2
<b>Total</b>	<b>0</b>	<b>586</b>	<b>523</b>	<b>2</b>	<b>1111</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>530</b>	<b>152</b>	<b>0</b>	<b>682</b>	<b>71</b>	<b>0</b>	<b>242</b>	<b>0</b>	<b>313</b>	<b>2106</b>	<b>2</b>
<b>Grand Total</b>	<b>0</b>	<b>2884</b>	<b>3059</b>	<b>5</b>	<b>5948</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3283</b>	<b>1088</b>	<b>0</b>	<b>4371</b>	<b>857</b>	<b>0</b>	<b>1712</b>	<b>0</b>	<b>2569</b>	<b>12888</b>	<b>5</b>
<b>Apprch %</b>	<b>0.0%</b>	<b>48.5%</b>	<b>51.4%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>75.1%</b>	<b>24.9%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>33.4%</b>	<b>0.0%</b>	<b>66.6%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>19.9%</b>	<b>100.0%</b>
<b>Total %</b>	<b>0.0%</b>	<b>22.4%</b>	<b>23.7%</b>	<b>0.0%</b>	<b>46.2%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>25.5%</b>	<b>8.4%</b>	<b>0.0%</b>	<b>33.9%</b>	<b>6.6%</b>	<b>0.0%</b>	<b>13.3%</b>	<b>0.0%</b>	<b>19.9%</b>	<b>100.0%</b>	

AM PEAK HOUR	Alpine Road Southbound					I-280 SB Ramps Westbound					Alpine Road Northbound					I-280 SB Ramps Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 07:30 to 08:30																						
Peak Hour For Entire Intersection Begins at 07:30																						
7:30	0	109	95	0	204	0	0	0	0	0	0	146	44	0	190	74	0	78	0	152	546	
7:45	0	134	119	1	254	0	0	0	0	0	0	132	34	0	166	97	0	117	0	214	634	
8:00	0	147	97	0	244	0	0	0	0	0	0	143	41	0	184	91	0	137	0	228	656	
8:15	0	111	75	0	186	0	0	0	0	0	0	178	62	0	240	88	0	106	0	194	620	
<b>Total Volume</b>	<b>0</b>	<b>501</b>	<b>386</b>	<b>1</b>	<b>888</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>599</b>	<b>181</b>	<b>0</b>	<b>780</b>	<b>350</b>	<b>0</b>	<b>438</b>	<b>0</b>	<b>788</b>	<b>2456</b>	
<b>% App Total</b>	<b>0.0%</b>	<b>56.4%</b>	<b>43.5%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>76.8%</b>	<b>23.2%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>44.4%</b>	<b>0.0%</b>	<b>55.6%</b>	<b>0.0%</b>	<b>0.0%</b>		
<b>PHF</b>	<b>.000</b>	<b>.852</b>	<b>.811</b>	<b>.250</b>	<b>.874</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.841</b>	<b>.730</b>	<b>.000</b>	<b>.813</b>	<b>.902</b>	<b>.000</b>	<b>.799</b>	<b>.000</b>	<b>.864</b>	<b>.936</b>	

NOON PEAK HOUR	Alpine Road Southbound					I-280 SB Ramps Westbound					Alpine Road Northbound					I-280 SB Ramps Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 15:00 to 16:00																						
Peak Hour For Entire Intersection Begins at 15:00																						
15:00	0	124	176	0	300	0	0	0	0	0	0	172	52	0	224	13	0	59	0	72	596	
15:15	0	112	188	0	300	0	0	0	0	0	0	145	68	0	213	10	0	62	0	72	585	
15:30	0	131	162	0	293	0	0	0	0	0	0	143	43	0	186	17	0	66	0	83	562	
15:45	0	140	166	1	307	0	0	0	0	0	0	136	69	0	205	11	0	70	0	81	593	
<b>Total Volume</b>	<b>0</b>	<b>507</b>	<b>692</b>	<b>1</b>	<b>1200</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>596</b>	<b>232</b>	<b>0</b>	<b>828</b>	<b>51</b>	<b>0</b>	<b>257</b>	<b>0</b>	<b>308</b>	<b>2336</b>	
<b>% App Total</b>	<b>0.0%</b>	<b>42.3%</b>	<b>57.7%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>72.0%</b>	<b>28.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>16.6%</b>	<b>0.0%</b>	<b>83.4%</b>	<b>0.0%</b>	<b>0.0%</b>		
<b>PHF</b>	<b>.000</b>	<b>.905</b>	<b>.920</b>	<b>.250</b>	<b>.977</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.866</b>	<b>.841</b>	<b>.000</b>	<b>.924</b>	<b>.750</b>	<b>.000</b>	<b>.918</b>	<b>.000</b>	<b>.928</b>	<b>.980</b>	

PM PEAK HOUR	Alpine Road Southbound					I-280 SB Ramps Westbound					Alpine Road Northbound					I-280 SB Ramps Eastbound					Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
Peak Hour Analysis From 16:00 to 17:00																						
Peak Hour For Entire Intersection Begins at 16:00																						
16:00	0	130	150	0	280	0	0	0	0	0	0	193	61	0	254	15	0	60	0	75	609	
16:15	0	120	156	1	277	0	0	0	0	0	0	159	44	0	203	13	0	63	0	76	556	
16:30	0	135	154	0	289	0	0	0	0	0	0	128	63	0	191	16	0	64	0	80	560	
16:45	0	120	139	0	259	0	0	0	0	0	0	151	35	0	186	9	0	53	0	62	507	
<b>Total Volume</b>	<b>0</b>	<b>505</b>	<b>599</b>	<b>1</b>	<b>1105</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>631</b>	<b>203</b>	<b>0</b>	<b>834</b>	<b>53</b>	<b>0</b>	<b>240</b>	<b>0</b>	<b>293</b>	<b>2232</b>	
<b>% App Total</b>	<b>0.0%</b>	<b>45.7%</b>	<b>54.2%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0</b>																

# ALL TRAFFIC DATA

San Mateo County  
All Vehicles & Turns On Unshifted  
Bikes & Peds On Bank 1  
Nothing On Bank 2

(916) 771-8700  
[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 15-7794-010 Alpine Road & San Franciscuito Creek Road/ Golf La  
Date : 10/21/2015

## Unshifted Count = All Vehicles & Turns

START TIME	Alpine Road Southbound					San Franciscuito Creek Road/ Golf Lane Westbound					Alpine Road Northbound					San Franciscuito Creek Road/ Golf Lane Eastbound					Total	Utums Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	3	110	2	0	115	0	0	0	0	0	0	110	0	0	110	0	0	0	0	0	225	0
7:15	0	169	2	0	171	0	0	1	0	1	1	137	0	0	138	0	0	0	1	1	311	1
7:30	2	181	4	0	187	0	0	0	0	0	0	193	0	0	193	0	0	1	0	1	381	0
7:45	1	253	5	1	260	1	0	0	0	1	1	156	1	0	158	1	0	0	0	1	420	1
<b>Total</b>	<b>6</b>	<b>713</b>	<b>13</b>	<b>1</b>	<b>733</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>596</b>	<b>1</b>	<b>0</b>	<b>599</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>1337</b>	<b>2</b>
8:00	1	270	6	3	280	0	0	2	0	2	0	185	0	0	185	2	0	0	0	2	469	3
8:15	2	217	3	2	224	0	0	0	0	0	1	231	1	0	233	0	0	1	0	1	458	2
8:30	1	172	6	0	179	0	0	0	0	0	0	209	0	0	209	0	0	0	0	0	388	0
8:45	4	200	6	0	210	0	0	3	0	3	2	175	1	0	178	1	0	0	0	1	392	0
<b>Total</b>	<b>8</b>	<b>859</b>	<b>21</b>	<b>5</b>	<b>893</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>800</b>	<b>2</b>	<b>0</b>	<b>805</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>1707</b>	<b>5</b>
14:00	2	138	6	0	146	0	0	1	0	1	0	155	0	0	155	5	0	2	0	7	309	0
14:15	2	147	3	0	152	1	0	1	0	2	2	144	0	0	146	1	0	1	0	2	302	0
14:30	1	162	2	0	165	0	0	3	0	3	1	148	1	0	150	4	0	3	0	7	325	0
14:45	2	178	4	0	184	0	0	3	0	3	1	145	0	0	146	1	0	1	0	2	335	0
<b>Total</b>	<b>7</b>	<b>625</b>	<b>15</b>	<b>0</b>	<b>647</b>	<b>1</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>9</b>	<b>4</b>	<b>592</b>	<b>1</b>	<b>0</b>	<b>597</b>	<b>11</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>18</b>	<b>1271</b>	<b>0</b>
15:00	2	171	3	1	177	0	0	1	0	1	2	230	0	0	232	5	0	1	0	6	416	1
15:15	0	155	12	0	167	0	0	2	0	2	1	199	0	0	200	5	0	0	0	5	374	0
15:30	0	191	11	0	202	0	0	4	0	4	2	176	0	0	178	9	0	3	0	12	396	0
15:45	1	201	6	0	208	0	0	3	0	3	0	198	0	0	198	9	0	1	0	10	419	0
<b>Total</b>	<b>3</b>	<b>718</b>	<b>32</b>	<b>1</b>	<b>754</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>10</b>	<b>5</b>	<b>803</b>	<b>0</b>	<b>0</b>	<b>808</b>	<b>28</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>33</b>	<b>1605</b>	<b>1</b>
16:00	1	182	5	0	188	0	0	18	0	18	0	230	0	0	230	4	0	2	0	6	442	0
16:15	0	187	8	0	195	0	0	2	0	2	2	200	0	0	202	4	0	1	0	5	404	0
16:30	0	187	2	0	189	0	0	1	0	1	2	188	0	0	190	5	0	3	0	8	388	0
16:45	1	169	3	0	173	0	0	0	0	0	2	175	0	0	177	3	0	3	0	6	356	0
<b>Total</b>	<b>2</b>	<b>725</b>	<b>18</b>	<b>0</b>	<b>745</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>0</b>	<b>21</b>	<b>6</b>	<b>793</b>	<b>0</b>	<b>0</b>	<b>799</b>	<b>16</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>25</b>	<b>1590</b>	<b>0</b>
17:00	0	200	8	0	208	0	0	0	0	0	3	167	0	0	170	6	0	0	0	6	384	0
17:15	0	199	7	0	206	0	0	2	0	2	1	155	0	0	156	8	0	3	0	11	375	0
17:30	0	201	8	0	209	0	0	0	0	0	0	177	0	0	177	6	0	1	0	7	393	0
17:45	0	190	7	0	197	0	0	3	0	3	1	154	0	0	155	7	0	3	0	10	365	0
<b>Total</b>	<b>0</b>	<b>790</b>	<b>30</b>	<b>0</b>	<b>820</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>5</b>	<b>653</b>	<b>0</b>	<b>0</b>	<b>658</b>	<b>27</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>34</b>	<b>1517</b>	<b>0</b>
<b>Grand Total</b>	<b>26</b>	<b>4430</b>	<b>129</b>	<b>7</b>	<b>4592</b>	<b>2</b>	<b>0</b>	<b>50</b>	<b>0</b>	<b>52</b>	<b>25</b>	<b>4237</b>	<b>4</b>	<b>0</b>	<b>4266</b>	<b>86</b>	<b>0</b>	<b>30</b>	<b>1</b>	<b>117</b>	<b>9027</b>	<b>8</b>
<b>Apprch %</b>	<b>0.6%</b>	<b>96.5%</b>	<b>2.8%</b>	<b>0.2%</b>	<b>3.8%</b>	<b>0.0%</b>	<b>96.2%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.6%</b>	<b>0.6%</b>	<b>99.3%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>73.5%</b>	<b>0.0%</b>	<b>25.6%</b>	<b>0.9%</b>	<b>0.0%</b>	<b>1.3%</b>	<b>100.0%</b>	<b>0.0%</b>
<b>Total %</b>	<b>0.3%</b>	<b>49.1%</b>	<b>1.4%</b>	<b>0.1%</b>	<b>50.9%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.6%</b>	<b>0.0%</b>	<b>0.6%</b>	<b>0.3%</b>	<b>46.9%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>47.3%</b>	<b>1.0%</b>	<b>0.0%</b>	<b>0.3%</b>	<b>0.0%</b>	<b>1.3%</b>	<b>100.0%</b>	<b>0.0%</b>

START TIME	Alpine Road Southbound					San Franciscuito Creek Road/ Golf Lane Westbound					Alpine Road Northbound					San Franciscuito Creek Road/ Golf Lane Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	1	253	5	1	260	1	0	0	0	1	1	156	1	0	158	1	0	0	0	1	420
8:00	1	270	6	3	280	0	0	2	0	2	0	185	0	0	185	2	0	0	0	2	469
8:15	2	217	3	2	224	0	0	0	0	0	1	231	1	0	233	0	0	1	0	1	458
8:30	1	172	6	0	179	0	0	0	0	0	0	209	0	0	209	0	0	0	0	0	388
<b>Total Volume</b>	<b>5</b>	<b>912</b>	<b>20</b>	<b>6</b>	<b>943</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>781</b>	<b>2</b>	<b>0</b>	<b>785</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>1735</b>
<b>% App Total</b>	<b>0.5%</b>	<b>96.7%</b>	<b>2.1%</b>	<b>0.6%</b>	<b>33.3%</b>	<b>0.0%</b>	<b>66.7%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.3%</b>	<b>99.5%</b>	<b>0.3%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>75.0%</b>	<b>0.0%</b>	<b>25.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>
<b>PHF</b>	<b>.625</b>	<b>.844</b>	<b>.833</b>	<b>.500</b>	<b>.842</b>	<b>.250</b>	<b>.000</b>	<b>.250</b>	<b>.000</b>	<b>.375</b>	<b>.500</b>	<b>.845</b>	<b>.500</b>	<b>.000</b>	<b>.842</b>	<b>.375</b>	<b>.000</b>	<b>.250</b>	<b>.000</b>	<b>.500</b>	<b>.925</b>

START TIME	Alpine Road Southbound					San Franciscuito Creek Road/ Golf Lane Westbound					Alpine Road Northbound					San Franciscuito Creek Road/ Golf Lane Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 15:00 to 16:00																					
Peak Hour For Entire Intersection Begins at 15:00																					
15:00	2	171	3	1	177	0	0	1	0	1	2	230	0	0	232	5	0	1	0	6	416
15:15	0	155	12	0	167	0	0	2	0	2	1	199	0	0	200	5	0	0	0	5	374
15:30	0	191	11	0	202	0	0	4	0	4	2	176	0	0	178	9	0	3	0	12	396
15:45	1	201	6	0	208	0	0	3	0	3	0	198	0	0	198	9	0	1	0	10	419
<b>Total Volume</b>	<b>3</b>	<b>718</b>	<b>32</b>	<b>1</b>	<b>754</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>10</b>	<b>5</b>	<b>803</b>	<b>0</b>	<b>0</b>	<b>808</b>	<b>28</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>33</b>	<b>1605</b>
<b>% App Total</b>	<b>0.4%</b>	<b>95.2%</b>	<b>4.2%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.6%</b>	<b>99.4%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>84.8%</b>	<b>0.0%</b>	<b>15.2%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>
<b>PHF</b>	<b>.375</b>	<b>.893</b>	<b>.667</b>	<b>.250</b>	<b>.906</b>	<b>.000</b>	<b>.000</b>	<b>.625</b>	<b>.000</b>	<b>.625</b>	<b>.873</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.871</b>	<b>.778</b>	<b>.000</b>	<b>.417</b>	<b>.000</b>	<b>.688</b>	<b>.958</b>

START TIME	Alpine Road Southbound					San Franciscuito Creek Road/ Golf Lane Westbound					Alpine Road Northbound					San Franciscuito Creek Road/ Golf Lane Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	1	182	5	0	188	0	0	18	0	18	0	230	0	0	230	4	0	2	0	6	442
16:15	0	187	8	0	195	0	0	2	0	2	2	200	0	0	202	4	0	1	0	5	404
16:30	0	187	2	0	189	0	0	1	0	1	2	188	0	0	190	5	0	3	0	8	3

# ALL TRAFFIC DATA

San Mateo County  
 All Vehicles & Turns On Unshifted  
 Bikes & Peds On Bank 1  
 Nothing On Bank 2

(916) 771-8700  
[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 15-7794-011 Alpine Road & La Cuesta Drive  
 Date : 10/21/2015

## Unshifted Count = All Vehicles & Turns

START TIME	Alpine Road Southbound					La Cuesta Drive Westbound					Alpine Road Northbound					La Cuesta Drive Eastbound					Total	Utums Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	0	98	15	0	113	0	0	0	0	0	2	86	0	0	88	19	0	1	0	20	221	0
7:15	0	126	36	0	162	0	0	0	0	0	2	112	0	0	114	25	0	4	0	29	305	0
7:30	0	151	33	0	184	0	0	0	0	0	4	165	0	0	169	34	0	4	0	38	391	0
7:45	0	192	54	0	246	0	0	0	0	0	2	141	0	0	143	15	0	1	0	16	405	0
<b>Total</b>	<b>0</b>	<b>567</b>	<b>138</b>	<b>0</b>	<b>705</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>504</b>	<b>0</b>	<b>0</b>	<b>514</b>	<b>93</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>103</b>	<b>1322</b>	<b>0</b>
8:00	0	162	113	0	275	0	0	0	0	0	6	148	0	0	154	37	0	5	1	43	472	1
8:15	0	157	66	0	223	0	0	0	0	0	9	209	0	0	218	27	0	6	0	33	474	0
8:30	0	159	17	0	176	0	0	0	0	0	5	171	0	0	176	41	0	3	0	44	396	0
8:45	0	186	18	0	204	0	0	0	0	0	4	142	0	0	146	37	0	3	0	40	390	0
<b>Total</b>	<b>0</b>	<b>664</b>	<b>214</b>	<b>0</b>	<b>878</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>670</b>	<b>0</b>	<b>0</b>	<b>694</b>	<b>142</b>	<b>0</b>	<b>17</b>	<b>1</b>	<b>160</b>	<b>1732</b>	<b>1</b>
14:00	0	113	22	0	135	0	0	0	0	0	3	134	0	0	137	24	0	6	0	30	302	0
14:15	0	125	27	0	152	0	0	0	0	0	5	116	0	0	121	30	0	3	0	33	306	0
14:30	0	131	34	0	165	0	0	0	0	0	2	130	0	0	132	22	0	4	0	26	323	0
14:45	0	131	44	0	175	0	0	0	0	0	9	118	0	0	127	28	0	5	0	33	335	0
<b>Total</b>	<b>0</b>	<b>500</b>	<b>127</b>	<b>0</b>	<b>627</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>498</b>	<b>0</b>	<b>0</b>	<b>517</b>	<b>104</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>122</b>	<b>1266</b>	<b>0</b>
15:00	0	134	45	0	179	0	0	0	0	0	2	197	0	0	199	32	0	5	0	37	415	0
15:15	0	120	32	0	152	0	0	0	0	0	8	158	0	0	166	46	0	5	0	51	369	0
15:30	0	143	48	0	191	0	0	0	0	0	6	155	0	0	161	28	0	1	1	30	382	1
15:45	0	172	30	0	202	0	0	0	0	0	7	166	0	0	173	27	0	6	0	33	408	0
<b>Total</b>	<b>0</b>	<b>569</b>	<b>155</b>	<b>0</b>	<b>724</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>676</b>	<b>0</b>	<b>0</b>	<b>699</b>	<b>133</b>	<b>0</b>	<b>17</b>	<b>1</b>	<b>151</b>	<b>1574</b>	<b>1</b>
16:00	0	149	43	0	192	0	0	0	0	0	6	207	0	0	213	30	0	6	0	36	441	0
16:15	0	133	39	0	172	0	0	0	0	0	4	177	0	0	181	30	0	4	0	34	387	0
16:30	0	156	47	0	203	0	0	0	0	0	3	155	0	0	158	32	0	1	0	33	394	0
16:45	0	138	32	0	170	0	0	0	0	0	3	153	0	0	156	28	0	4	0	32	358	0
<b>Total</b>	<b>0</b>	<b>576</b>	<b>161</b>	<b>0</b>	<b>737</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>692</b>	<b>0</b>	<b>0</b>	<b>708</b>	<b>120</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>135</b>	<b>1580</b>	<b>0</b>
17:00	0	162	38	0	200	0	0	0	0	0	4	134	0	0	138	32	0	3	0	35	373	0
17:15	0	168	35	0	203	0	0	0	0	0	7	135	0	0	142	25	0	8	0	33	378	0
17:30	0	160	41	0	201	0	0	0	0	0	5	148	0	0	153	30	0	1	0	31	385	0
17:45	0	168	36	0	204	0	0	0	0	0	6	131	0	0	137	19	0	3	0	22	363	0
<b>Total</b>	<b>0</b>	<b>658</b>	<b>150</b>	<b>0</b>	<b>808</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>548</b>	<b>0</b>	<b>0</b>	<b>570</b>	<b>106</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>121</b>	<b>1499</b>	<b>0</b>
<b>Grand Total</b>	<b>0</b>	<b>3534</b>	<b>945</b>	<b>0</b>	<b>4479</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>114</b>	<b>3588</b>	<b>0</b>	<b>0</b>	<b>3702</b>	<b>698</b>	<b>0</b>	<b>92</b>	<b>2</b>	<b>792</b>	<b>8973</b>	<b>2</b>
Apprch %	0.0%	78.9%	21.1%	0.0%	49.9%	0.0%	0.0%	0.0%	0.0%	0.0%	3.1%	96.9%	0.0%	0.0%	41.3%	88.1%	0.0%	11.6%	0.3%	8.8%	100.0%	
Total %	0.0%	39.4%	10.5%	0.0%	49.9%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	40.0%	0.0%	0.0%	41.3%	7.8%	0.0%	1.0%	0.0%	8.8%	100.0%	

AM PEAK HOUR	Alpine Road Southbound					La Cuesta Drive Westbound					Alpine Road Northbound					La Cuesta Drive Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	0	192	54	0	246	0	0	0	0	0	2	141	0	0	143	15	0	1	0	16	405
8:00	0	162	113	0	275	0	0	0	0	0	6	148	0	0	154	37	0	5	1	43	472
8:15	0	157	66	0	223	0	0	0	0	0	9	209	0	0	218	27	0	6	0	33	474
8:30	0	159	17	0	176	0	0	0	0	0	5	171	0	0	176	41	0	3	0	44	396
Total Volume	0	670	250	0	920	0	0	0	0	0	22	669	0	0	691	120	0	15	1	136	1747
% App Total	0.0%	72.8%	27.2%	0.0%	49.9%	0.0%	0.0%	0.0%	0.0%	0.0%	3.2%	96.8%	0.0%	0.0%	41.3%	88.2%	0.0%	11.0%	0.7%	8.8%	100.0%
PHF	.000	.872	.553	.000	.836	.000	.000	.000	.000	.000	.611	.800	.000	.000	.792	.732	.000	.625	.250	.773	.921

NOON PEAK HOUR	Alpine Road Southbound					La Cuesta Drive Westbound					Alpine Road Northbound					La Cuesta Drive Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 15:00 to 16:00																					
Peak Hour For Entire Intersection Begins at 15:00																					
15:00	0	134	45	0	179	0	0	0	0	0	2	197	0	0	199	32	0	5	0	37	415
15:15	0	120	32	0	152	0	0	0	0	0	8	158	0	0	166	46	0	5	0	51	369
15:30	0	143	48	0	191	0	0	0	0	0	6	155	0	0	161	28	0	1	1	30	382
15:45	0	172	30	0	202	0	0	0	0	0	7	166	0	0	173	27	0	6	0	33	408
Total Volume	0	569	155	0	724	0	0	0	0	0	23	676	0	0	699	133	0	17	1	151	1574
% App Total	0.0%	78.6%	21.4%	0.0%	49.9%	0.0%	0.0%	0.0%	0.0%	0.0%	3.3%	96.7%	0.0%	0.0%	41.3%	88.1%	0.0%	11.3%	0.7%	8.8%	100.0%
PHF	.000	.827	.807	.000	.896	.000	.000	.000	.000	.000	.719	.858	.000	.000	.878	.723	.000	.708	.250	.740	.948

PM PEAK HOUR	Alpine Road Southbound					La Cuesta Drive Westbound					Alpine Road Northbound					La Cuesta Drive Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	0	149	43	0	192	0	0	0	0	0	6	207	0	0	213	30	0	6	0	36	441
16:15	0	133	39	0	172	0	0	0	0	0	4	177	0	0	181	30	0	4	0	34	387
16:30	0	156	47	0	203	0	0	0	0	0	3	155	0	0	158	32	0	1	0	33	394
16:45	0	138	32	0	170	0	0	0	0	0	3	153	0	0	156	28	0	4	0	32	358
Total Volume	0	576	161	0	737	0	0	0	0	0	16	692	0	0	708	120	0	15	0	135	1580
% App Total	0.0%	78.2%	21.8%	0.0%	49.9%	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%	97.7%	0.0%	0.0%	41.3%	88.9%	0.0%	11.1%	0.0%	8.8%	100.0%
PHF	.000	.923	.																		

# ALL TRAFFIC DATA

San Mateo County  
All Vehicles & Turns On Unshifted  
Bikes & Peds On Bank 1  
Nothing On Bank 2

(916) 771-8700  
[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 15-7794-012 Alpine Road & La Mesa Drive  
Date : 10/21/2015

## Unshifted Count = All Vehicles & Turns

START TIME	Alpine Road Southbound					La Mesa Drive Westbound					Alpine Road Northbound					La Mesa Drive Eastbound					Total	Utums Total	
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL			
7:00	0	77	11	0	88	0	0	0	0	0	5	81	0	0	86	15	0	2	0	17	31	191	0
7:15	0	116	17	0	133	0	0	0	0	0	3	83	0	0	86	26	0	5	0	31	250	0	
7:30	0	134	18	0	152	0	0	0	0	0	4	126	0	0	130	41	0	13	0	54	336	0	
7:45	0	169	28	0	197	0	0	0	0	0	4	112	0	0	116	37	0	9	0	46	359	0	
<b>Total</b>	<b>0</b>	<b>496</b>	<b>74</b>	<b>0</b>	<b>570</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>402</b>	<b>0</b>	<b>0</b>	<b>418</b>	<b>119</b>	<b>0</b>	<b>29</b>	<b>0</b>	<b>148</b>	<b>1136</b>	<b>0</b>	
8:00	0	140	24	0	164	0	0	0	0	0	8	104	0	0	112	56	0	10	0	66	342	0	
8:15	0	149	21	0	170	0	0	0	0	0	3	153	0	0	156	70	0	13	0	83	409	0	
8:30	0	132	18	0	150	0	0	0	0	0	5	111	0	0	116	45	0	13	0	58	324	0	
8:45	0	157	14	0	171	0	0	0	0	0	6	106	0	0	112	34	0	16	0	50	333	0	
<b>Total</b>	<b>0</b>	<b>578</b>	<b>77</b>	<b>0</b>	<b>655</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>474</b>	<b>0</b>	<b>0</b>	<b>496</b>	<b>205</b>	<b>0</b>	<b>52</b>	<b>0</b>	<b>257</b>	<b>1408</b>	<b>0</b>	
14:00	0	102	19	0	121	0	0	0	0	0	6	122	0	0	128	14	0	4	0	18	267	0	
14:15	0	101	22	0	123	0	0	0	0	0	7	106	0	0	113	11	0	9	0	20	256	0	
14:30	0	91	24	0	115	0	0	0	0	0	3	104	0	0	107	17	0	11	0	28	250	0	
14:45	0	107	20	0	127	0	0	0	0	0	5	103	0	0	108	22	0	6	0	28	263	0	
<b>Total</b>	<b>0</b>	<b>401</b>	<b>85</b>	<b>0</b>	<b>486</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>435</b>	<b>0</b>	<b>0</b>	<b>456</b>	<b>64</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>94</b>	<b>1036</b>	<b>0</b>	
15:00	0	117	20	0	137	0	0	0	0	0	4	147	0	0	151	48	0	5	0	53	341	0	
15:15	0	91	21	0	112	0	0	0	0	0	7	127	0	0	134	32	0	16	0	48	294	0	
15:30	0	125	22	0	147	0	0	0	0	0	11	121	0	0	132	29	0	15	0	44	323	0	
15:45	0	150	17	0	167	0	0	0	0	0	8	136	0	0	144	43	0	14	0	57	368	0	
<b>Total</b>	<b>0</b>	<b>483</b>	<b>80</b>	<b>0</b>	<b>563</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>531</b>	<b>0</b>	<b>0</b>	<b>561</b>	<b>152</b>	<b>0</b>	<b>50</b>	<b>0</b>	<b>202</b>	<b>1326</b>	<b>0</b>	
16:00	0	125	22	0	147	0	0	0	0	0	10	176	0	0	186	39	0	10	0	49	382	0	
16:15	0	103	22	0	125	0	0	0	0	0	15	131	0	0	146	38	0	11	0	49	320	0	
16:30	0	143	23	0	166	0	0	0	0	0	8	132	0	0	140	36	0	12	0	48	354	0	
16:45	0	119	19	0	138	0	0	0	0	0	5	113	0	0	118	36	0	11	0	47	303	0	
<b>Total</b>	<b>0</b>	<b>490</b>	<b>86</b>	<b>0</b>	<b>576</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>552</b>	<b>0</b>	<b>0</b>	<b>590</b>	<b>149</b>	<b>0</b>	<b>44</b>	<b>0</b>	<b>193</b>	<b>1359</b>	<b>0</b>	
17:00	0	150	13	1	164	0	0	0	0	0	9	104	0	0	113	37	0	9	0	46	323	1	
17:15	0	135	27	0	162	0	0	0	0	0	20	116	0	0	136	28	0	10	0	38	336	0	
17:30	0	78	15	0	93	0	0	0	0	0	7	75	0	0	82	23	0	4	0	27	202	0	
17:45	0	133	37	0	170	0	0	0	0	0	2	98	0	0	100	21	0	5	0	26	296	0	
<b>Total</b>	<b>0</b>	<b>496</b>	<b>92</b>	<b>1</b>	<b>589</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>393</b>	<b>0</b>	<b>0</b>	<b>431</b>	<b>109</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>137</b>	<b>1157</b>	<b>1</b>	
<b>Grand Total</b>	<b>0</b>	<b>2944</b>	<b>494</b>	<b>1</b>	<b>3439</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>165</b>	<b>2787</b>	<b>0</b>	<b>0</b>	<b>2952</b>	<b>798</b>	<b>0</b>	<b>233</b>	<b>0</b>	<b>1031</b>	<b>7422</b>	<b>1</b>	
<b>Apprch %</b>	<b>0.0%</b>	<b>85.6%</b>	<b>14.4%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>5.6%</b>	<b>94.4%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>77.4%</b>	<b>0.0%</b>	<b>22.6%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>10.8%</b>	<b>100.0%</b>	
<b>Total %</b>	<b>0.0%</b>	<b>39.7%</b>	<b>6.7%</b>	<b>0.0%</b>	<b>46.3%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>2.2%</b>	<b>37.6%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>39.8%</b>	<b>10.8%</b>	<b>0.0%</b>	<b>3.1%</b>	<b>0.0%</b>	<b>13.9%</b>	<b>100.0%</b>		

AM PEAK HOUR	Alpine Road Southbound					La Mesa Drive Westbound					Alpine Road Northbound					La Mesa Drive Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	134	18	0	152	0	0	0	0	0	4	126	0	0	130	41	0	13	0	54	336
7:45	0	169	28	0	197	0	0	0	0	0	4	112	0	0	116	37	0	9	0	46	359
8:00	0	140	24	0	164	0	0	0	0	0	8	104	0	0	112	56	0	10	0	66	342
8:15	0	149	21	0	170	0	0	0	0	0	3	153	0	0	156	70	0	13	0	83	409
<b>Total Volume</b>	<b>0</b>	<b>592</b>	<b>91</b>	<b>0</b>	<b>683</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>495</b>	<b>0</b>	<b>0</b>	<b>514</b>	<b>204</b>	<b>0</b>	<b>45</b>	<b>0</b>	<b>249</b>	<b>1446</b>
<b>% App Total</b>	<b>0.0%</b>	<b>86.7%</b>	<b>13.3%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>3.7%</b>	<b>96.3%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>81.9%</b>	<b>0.0%</b>	<b>18.1%</b>	<b>0.0%</b>	<b>0.0%</b>	
<b>PHF</b>	<b>.000</b>	<b>.876</b>	<b>.813</b>	<b>.000</b>	<b>.867</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.594</b>	<b>.809</b>	<b>.000</b>	<b>.000</b>	<b>.824</b>	<b>.729</b>	<b>.000</b>	<b>.865</b>	<b>.000</b>	<b>.750</b>	<b>.884</b>

NOON PEAK HOUR	Alpine Road Southbound					La Mesa Drive Westbound					Alpine Road Northbound					La Mesa Drive Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 15:00 to 16:00																					
Peak Hour For Entire Intersection Begins at 15:00																					
15:00	0	117	20	0	137	0	0	0	0	0	4	147	0	0	151	48	0	5	0	53	341
15:15	0	91	21	0	112	0	0	0	0	0	7	127	0	0	134	32	0	16	0	48	294
15:30	0	125	22	0	147	0	0	0	0	0	11	121	0	0	132	29	0	15	0	44	323
15:45	0	150	17	0	167	0	0	0	0	0	8	136	0	0	144	43	0	14	0	57	368
<b>Total Volume</b>	<b>0</b>	<b>483</b>	<b>80</b>	<b>0</b>	<b>563</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>531</b>	<b>0</b>	<b>0</b>	<b>561</b>	<b>152</b>	<b>0</b>	<b>50</b>	<b>0</b>	<b>202</b>	<b>1326</b>
<b>% App Total</b>	<b>0.0%</b>	<b>85.8%</b>	<b>14.2%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>5.3%</b>	<b>94.7%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>75.2%</b>	<b>0.0%</b>	<b>24.8%</b>	<b>0.0%</b>	<b>0.0%</b>	
<b>PHF</b>	<b>.000</b>	<b>.805</b>	<b>.909</b>	<b>.000</b>	<b>.843</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.682</b>	<b>.903</b>	<b>.000</b>	<b>.000</b>	<b>.929</b>	<b>.782</b>	<b>.000</b>	<b>.781</b>	<b>.000</b>	<b>.886</b>	<b>.901</b>

PM PEAK HOUR	Alpine Road Southbound					La Mesa Drive Westbound					Alpine Road Northbound					La Mesa Drive Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	0	125	22	0	147	0	0	0	0	0	10	176	0	0	186	39	0	10	0	49	382
16:15	0	103	22	0	125	0	0	0	0	0	15	131	0	0	146	38	0	11	0	49	320
16:30	0	143	23	0	166	0	0	0	0	0	8	132	0	0	140	36	0	12	0	48	354
16:45	0	119	19	0	138	0	0	0	0	0	5	113	0	0	118	36	0	11	0	47	303
<b>Total Volume</b>	<b>0</b>	<b>490</b>	<b>86</b>	<b>0</b>	<b>576</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>552</b>	<b>0</b>	<b>0</b>	<b>590</b>	<b>149</b>	<b>0</b>	<b>44</b>	<b>0</b>	<b>193</b>	<b>1359</b>
<b>% App Total</b>	<b>0.0%</b>	<b>85.1%</b>	<b>14.9%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>6.4%</b>	<b>93.6%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>77.2%</b>	<b>0.0%</b>	<b>22.8%</b>	<b>0.0%</b>	<b>0.0%</b>	
<b>PHF</b>	<b>.000</b>	<b>.857</b>	<b>.935</b>	<b>.000</b> </																	

# ALL TRAFFIC DATA

San Mateo County  
 All Vehicles & Turns On Unshifted  
 Bikes & Peds On Bank 1  
 Nothing On Bank 2

(916) 771-8700  
[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 15-7794-013 I-280 NB Off Ramp & Sand Hill Road(EB)  
 Date : 10/21/2015

## Unshifted Count = All Vehicles & Turns

START TIME	I-280 NB Off Ramp Southbound					Sand Hill Road(EB) Westbound					I-280 NB Off Ramp Northbound					Sand Hill Road(EB) Eastbound					Total	Utums Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	8	0	0	0	8	0	0	0	0	0	26	79	0	105	25	292	0	0	317	430	0	
7:15	10	0	0	0	10	0	0	0	0	0	33	84	0	117	23	425	0	0	448	575	0	
7:30	10	0	0	0	10	0	0	0	0	0	19	112	0	131	22	410	0	0	432	573	0	
7:45	16	0	0	1	17	0	0	0	0	0	29	109	0	138	27	444	0	0	471	626	1	
<b>Total</b>	<b>44</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>45</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>107</b>	<b>384</b>	<b>0</b>	<b>491</b>	<b>97</b>	<b>1571</b>	<b>0</b>	<b>0</b>	<b>1668</b>	<b>2204</b>	<b>1</b>	
8:00	13	0	0	0	13	0	0	0	0	0	18	120	0	138	29	422	0	0	451	602	0	
8:15	13	0	0	0	13	0	0	0	0	0	28	98	0	126	31	384	0	0	415	554	0	
8:30	19	0	0	0	19	0	0	0	0	0	16	98	0	114	33	390	0	0	423	556	0	
8:45	18	0	0	0	18	0	0	0	0	0	22	111	0	133	37	395	0	0	432	583	0	
<b>Total</b>	<b>63</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>63</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>84</b>	<b>427</b>	<b>0</b>	<b>511</b>	<b>130</b>	<b>1591</b>	<b>0</b>	<b>0</b>	<b>1721</b>	<b>2295</b>	<b>0</b>	
14:00	20	0	0	0	20	0	0	0	0	0	6	48	0	54	10	158	0	0	168	242	0	
14:15	26	0	0	0	26	0	0	0	0	0	3	50	0	53	8	154	0	0	162	241	0	
14:30	27	0	0	0	27	0	0	0	0	0	13	50	0	63	12	159	0	0	171	261	0	
14:45	22	0	0	0	22	0	0	0	0	0	4	55	0	59	8	165	0	0	173	254	0	
<b>Total</b>	<b>95</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>95</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>203</b>	<b>0</b>	<b>229</b>	<b>38</b>	<b>636</b>	<b>0</b>	<b>0</b>	<b>674</b>	<b>988</b>	<b>0</b>	
15:00	16	0	0	0	16	0	0	0	0	0	3	62	0	65	5	151	0	0	156	237	0	
15:15	12	0	0	0	12	0	0	0	0	0	9	58	0	67	8	152	0	0	160	239	0	
15:30	14	0	0	0	14	0	0	0	0	0	4	61	0	65	14	156	0	0	170	249	0	
15:45	18	0	0	0	18	0	0	0	0	0	3	49	0	52	6	169	0	0	175	245	0	
<b>Total</b>	<b>60</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>60</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>230</b>	<b>0</b>	<b>249</b>	<b>33</b>	<b>628</b>	<b>0</b>	<b>0</b>	<b>661</b>	<b>970</b>	<b>0</b>	
16:00	21	0	0	0	21	0	0	0	0	0	4	52	0	56	13	170	0	0	183	260	0	
16:15	12	0	0	1	13	0	0	0	0	0	9	55	0	64	7	156	0	0	163	240	1	
16:30	15	0	0	0	15	0	0	0	0	0	5	43	0	48	10	167	0	0	177	240	0	
16:45	16	0	0	0	16	0	0	0	0	0	5	46	0	51	10	185	0	0	195	262	0	
<b>Total</b>	<b>64</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>65</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>196</b>	<b>0</b>	<b>219</b>	<b>40</b>	<b>678</b>	<b>0</b>	<b>0</b>	<b>718</b>	<b>1002</b>	<b>1</b>	
17:00	37	0	0	0	37	0	0	0	0	0	6	44	0	50	9	177	0	0	186	273	0	
17:15	29	0	0	0	29	0	0	0	0	0	5	52	0	57	12	217	0	0	229	315	0	
17:30	25	0	0	0	25	0	0	0	0	0	6	40	0	46	8	203	0	0	211	282	0	
17:45	20	0	0	1	21	0	0	0	0	0	9	26	0	35	11	240	0	0	251	307	1	
<b>Total</b>	<b>111</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>112</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>162</b>	<b>0</b>	<b>188</b>	<b>40</b>	<b>837</b>	<b>0</b>	<b>0</b>	<b>877</b>	<b>1177</b>	<b>1</b>	
<b>Grand Total</b>	<b>437</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>440</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>285</b>	<b>1602</b>	<b>0</b>	<b>1887</b>	<b>378</b>	<b>5941</b>	<b>0</b>	<b>0</b>	<b>6319</b>	<b>8646</b>	<b>3</b>	
<b>Apprch %</b>	<b>99.3%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.7%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>15.1%</b>	<b>84.9%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>6.0%</b>	<b>94.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>73.1%</b>	<b>100.0%</b>	
<b>Total %</b>	<b>5.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>5.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>3.3%</b>	<b>18.5%</b>	<b>0.0%</b>	<b>21.8%</b>	<b>4.4%</b>	<b>68.7%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>73.1%</b>	<b>100.0%</b>		

AM PEAK HOUR	I-280 NB Off Ramp Southbound					Sand Hill Road(EB) Westbound					I-280 NB Off Ramp Northbound					Sand Hill Road(EB) Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	10	0	0	0	10	0	0	0	0	0	33	84	0	117	23	425	0	0	448	575	
7:30	10	0	0	0	10	0	0	0	0	0	19	112	0	131	22	410	0	0	432	573	
7:45	16	0	0	1	17	0	0	0	0	0	29	109	0	138	27	444	0	0	471	626	
8:00	13	0	0	0	13	0	0	0	0	0	18	120	0	138	29	422	0	0	451	602	
<b>Total Volume</b>	<b>49</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>99</b>	<b>425</b>	<b>0</b>	<b>524</b>	<b>101</b>	<b>1701</b>	<b>0</b>	<b>0</b>	<b>1802</b>	<b>2376</b>	
<b>% App Total</b>	<b>98.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>2.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>18.9%</b>	<b>81.1%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>5.6%</b>	<b>94.4%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>95.6%</b>	
<b>PHF</b>	<b>.766</b>	<b>.000</b>	<b>.000</b>	<b>.250</b>	<b>.735</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.750</b>	<b>.885</b>	<b>.000</b>	<b>.949</b>	<b>.871</b>	<b>.958</b>	<b>.000</b>	<b>.000</b>	<b>.956</b>	<b>.949</b>	

NOON PEAK HOUR	I-280 NB Off Ramp Southbound					Sand Hill Road(EB) Westbound					I-280 NB Off Ramp Northbound					Sand Hill Road(EB) Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 14:00 to 15:00																					
Peak Hour For Entire Intersection Begins at 14:00																					
14:00	20	0	0	0	20	0	0	0	0	0	6	48	0	54	10	158	0	0	168	242	
14:15	26	0	0	0	26	0	0	0	0	0	3	50	0	53	8	154	0	0	162	241	
14:30	27	0	0	0	27	0	0	0	0	0	13	50	0	63	12	159	0	0	171	261	
14:45	22	0	0	0	22	0	0	0	0	0	4	55	0	59	8	165	0	0	173	254	
<b>Total Volume</b>	<b>95</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>95</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>203</b>	<b>0</b>	<b>229</b>	<b>38</b>	<b>636</b>	<b>0</b>	<b>0</b>	<b>674</b>	<b>988</b>	
<b>% App Total</b>	<b>100.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>11.4%</b>	<b>88.6%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>5.6%</b>	<b>94.4%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>95.6%</b>	
<b>PHF</b>	<b>.880</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.880</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.000</b>	<b>.500</b>	<b>.923</b>	<b>.000</b>	<b>.909</b>	<b>.792</b>	<b>.964</b>	<b>.000</b>	<b>.000</b>	<b>.974</b>	<b>.956</b>	

PM PEAK HOUR	I-280 NB Off Ramp Southbound					Sand Hill Road(EB) Westbound					I-280 NB Off Ramp Northbound					Sand Hill Road(EB) Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	37	0	0	0	37	0	0	0	0	0	6	44	0	50	9	177	0	0	186	273	
17:15	29	0	0	0	29	0	0	0	0	0	5	52	0	57	12	217	0	0	229	315	
17:30	25	0	0	0	25	0	0	0	0	0	6	40	0	46	8	203	0	0	211	282	
17:45	20	0	0	1	21	0	0	0	0	0	9	26	0	35	11	240	0	0	251	307	
<b>Total Volume</b>	<b>111</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>112</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>										

# ALL TRAFFIC DATA

San Mateo County  
 All Vehicles & Turns On Unshifted  
 Bikes & Peds On Bank 1  
 Nothing On Bank 2

(916) 771-8700  
[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 15-7794-014 I-280 NB Off Ramp & Sand Hill Road(WB)-I-280 NB C  
 Date : 10/21/2015

## Unshifted Count = All Vehicles & Turns

START TIME	I-280 NB Off Ramp Southbound					Sand Hill Road(WB) Westbound					I-280 NB Off Ramp Northbound					Sand Hill Road(WB)-I-280 NB On Ramp Eastbound					Total	Utums Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL		
7:00	0	7	7	0	14	1	102	5	0	108	2	50	0	0	52	0	0	0	0	0	174	0
7:15	0	8	6	0	14	2	129	5	0	136	2	54	0	0	56	0	0	0	0	0	206	0
7:30	0	9	6	0	15	1	192	12	0	205	0	41	0	0	41	0	0	0	0	0	261	0
7:45	0	13	6	0	19	4	185	3	0	192	0	55	0	0	55	0	0	0	0	0	266	0
Total	0	37	25	0	62	8	608	25	0	641	4	200	0	0	204	0	0	0	0	0	907	0
8:00	0	12	7	0	19	1	210	10	0	221	2	44	0	0	46	0	0	0	0	0	286	0
8:15	0	12	15	0	27	0	227	8	0	235	1	56	0	0	57	0	0	0	0	0	319	0
8:30	0	14	10	0	24	5	151	4	0	160	1	49	0	0	50	0	0	0	0	0	234	0
8:45	0	17	5	0	22	1	162	9	0	172	1	58	0	0	59	0	0	0	0	0	253	0
Total	0	55	37	0	92	7	750	31	0	788	5	207	0	0	212	0	0	0	0	0	1092	0
14:00	0	19	41	0	60	0	297	7	0	304	1	15	0	0	16	0	0	0	0	0	380	0
14:15	0	27	21	0	48	1	311	4	0	316	1	10	0	0	11	0	0	0	0	0	375	0
14:30	0	23	45	0	68	2	348	5	0	355	0	25	0	0	25	0	0	0	0	0	448	0
14:45	0	22	48	0	70	1	377	4	0	382	1	12	0	0	13	0	0	0	0	0	465	0
Total	0	91	155	0	246	4	1333	20	0	1357	3	62	0	0	65	0	0	0	0	0	1668	0
15:00	0	14	51	0	65	1	452	5	0	458	0	7	0	0	7	0	0	0	0	0	530	0
15:15	0	11	41	0	52	0	441	7	0	448	0	15	0	0	15	0	0	0	0	0	515	0
15:30	0	14	42	0	56	1	460	6	0	467	0	17	0	0	17	0	0	0	0	0	540	0
15:45	0	19	32	0	51	0	440	2	0	442	0	11	0	0	11	0	0	0	0	0	504	0
Total	0	58	166	0	224	2	1793	20	0	1815	0	50	0	0	50	0	0	0	0	0	2089	0
16:00	0	17	41	0	58	1	469	1	0	471	1	14	0	0	15	0	0	0	0	0	544	0
16:15	0	15	48	0	63	1	488	4	0	493	6	13	0	0	19	0	0	0	0	0	575	0
16:30	0	15	47	0	62	1	457	4	0	462	0	13	0	0	13	0	0	0	0	0	537	0
16:45	0	16	39	0	55	0	391	1	0	392	1	16	0	0	17	0	0	0	0	0	464	0
Total	0	63	175	0	238	3	1805	10	0	1818	8	56	0	0	64	0	0	0	0	0	2120	0
17:00	0	36	51	0	87	1	400	0	0	401	1	15	0	0	16	0	0	0	0	0	504	0
17:15	0	29	41	0	70	0	399	0	0	399	3	14	0	0	17	0	0	0	0	0	486	0
17:30	0	23	33	0	56	1	399	0	0	400	0	13	0	0	13	0	0	0	0	0	469	0
17:45	0	17	41	0	58	4	353	0	0	357	2	19	0	0	21	0	0	0	0	0	436	0
Total	0	105	166	0	271	6	1551	0	0	1557	6	61	0	0	67	0	0	0	0	0	1895	0
Grand Total	0	409	724	0	1133	30	7840	106	0	7976	26	636	0	0	662	0	0	0	0	0	9771	0
Apprch %	0.0%	36.1%	63.9%	0.0%	11.6%	0.4%	98.3%	1.3%	0.0%	81.6%	3.9%	96.1%	0.0%	0.0%	6.8%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0
Total %	0.0%	4.2%	7.4%	0.0%	11.6%	0.3%	80.2%	1.1%	0.0%	81.6%	0.3%	6.5%	0.0%	0.0%	6.8%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0

AM PEAK HOUR	I-280 NB Off Ramp Southbound					Sand Hill Road(WB) Westbound					I-280 NB Off Ramp Northbound					Sand Hill Road(WB)-I-280 NB On Ramp Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	0	9	6	0	15	1	192	12	0	205	0	41	0	0	41	0	0	0	0	0	261
7:45	0	13	6	0	19	4	185	3	0	192	0	55	0	0	55	0	0	0	0	0	266
8:00	0	12	7	0	19	1	210	10	0	221	2	44	0	0	46	0	0	0	0	0	286
8:15	0	12	15	0	27	0	227	8	0	235	1	56	0	0	57	0	0	0	0	0	319
Total Volume	0	46	34	0	80	6	814	33	0	853	3	196	0	0	199	0	0	0	0	0	1132
% App Total	0.0%	57.5%	42.5%	0.0%	7.1%	0.7%	95.4%	3.9%	0.0%	81.6%	1.5%	98.5%	0.0%	0.0%	6.8%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
PHF	.000	.885	.567	.000	.741	.375	.896	.688	.000	.907	.375	.875	.000	.000	.873	.000	.000	.000	.000	.000	.887

NOON PEAK HOUR	I-280 NB Off Ramp Southbound					Sand Hill Road(WB) Westbound					I-280 NB Off Ramp Northbound					Sand Hill Road(WB)-I-280 NB On Ramp Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 15:00 to 16:00																					
Peak Hour For Entire Intersection Begins at 15:00																					
15:00	0	14	51	0	65	1	452	5	0	458	0	7	0	0	7	0	0	0	0	0	530
15:15	0	11	41	0	52	0	441	7	0	448	0	15	0	0	15	0	0	0	0	0	515
15:30	0	14	42	0	56	1	460	6	0	467	0	17	0	0	17	0	0	0	0	0	540
15:45	0	19	32	0	51	0	440	2	0	442	0	11	0	0	11	0	0	0	0	0	504
Total Volume	0	58	166	0	224	2	1793	20	0	1815	0	50	0	0	50	0	0	0	0	0	2089
% App Total	0.0%	25.9%	74.1%	0.0%	19.4%	0.1%	98.8%	1.1%	0.0%	81.6%	0.0%	100.0%	0.0%	0.0%	6.8%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
PHF	.000	.763	.814	.000	.862	.500	.974	.714	.000	.972	.000	.735	.000	.000	.735	.000	.000	.000	.000	.000	.967

PM PEAK HOUR	I-280 NB Off Ramp Southbound					Sand Hill Road(WB) Westbound					I-280 NB Off Ramp Northbound					Sand Hill Road(WB)-I-280 NB On Ramp Eastbound					Total
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	0	17	41	0	58	1	469	1	0	471	1	14	0	0	15	0	0	0	0	0	544
16:15	0	15	48	0	63	1	488	4	0	493	6	13	0	0	19	0	0	0	0	0	575
16:30	0	15	47	0	62	1	457	4	0	462	0	13	0	0	13	0	0	0	0	0	537
16:45	0	16	39	0	55	0	391	1	0	392	1	16	0	0	17	0	0	0	0	0	464
Total Volume	0	63	175	0	238	3	1805	10	0	1818	8	56	0	0	64	0	0	0	0	0	2120
% App Total	0.0%	26.5%	73.5%	0.0%	20.1%	0.2%	99.3%	0.6%	0.0%	81.6%	12.5%	87.5%	0.0%	0.0%	6.8%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
PHF	.000	.926	.911	.000	.944	.750	.925	.625	.000	.922	.333	.875	.000	.000	.842	.000	.000	.000	.000	.000	.922



# ALL TRAFFIC DATA

City of San Mateo County  
 All Vehicles & Utturns On Unshifted  
 Nothing On Bank 1  
 Nothing On Bank 2

(916) 771-8700  
[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 15-7794-214 I-280 NB Off Ramp & Sand Hill Road(WB)  
 Date : 10/21/2015

## Unshifted Count = All Vehicles & Utturns

START TIME	I-280 NB Off Ramp Southbound					Sand Hill Road(WB) Westbound					I-280 NB Off Ramp Northbound					Sand Hill Road(WB) Eastbound					Total	Utturns Total					
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL							
7:00	0	0	5	0	5	0	70	0	0	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	76	0
7:15	0	0	5	0	5	0	93	0	0	93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98	0
7:30	0	0	4	0	4	0	140	0	0	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	144	0
7:45	0	0	1	0	1	0	126	0	0	126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	127	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>429</b>	<b>0</b>	<b>0</b>	<b>429</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>445</b>	<b>0</b>
8:00	0	0	5	0	5	0	135	0	0	135	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	142	0
8:15	0	0	12	0	12	0	160	0	0	160	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	173	0
8:30	0	0	8	0	8	0	101	0	0	101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	109	0
8:45	0	0	5	0	5	0	86	0	0	86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>482</b>	<b>0</b>	<b>0</b>	<b>482</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>515</b>	<b>0</b>
14:00	0	0	25	0	25	0	172	0	0	172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	197	0
14:15	0	0	16	0	16	0	209	0	0	209	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	225	0
14:30	0	0	29	0	29	0	222	0	0	222	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	251	0
14:45	0	0	27	0	27	0	226	0	0	226	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	254	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>97</b>	<b>0</b>	<b>97</b>	<b>0</b>	<b>829</b>	<b>0</b>	<b>0</b>	<b>829</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>927</b>	<b>0</b>
15:00	0	0	31	0	31	0	280	0	0	280	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	311	0
15:15	0	0	23	0	23	0	277	0	0	277	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	300	0
15:30	0	0	25	0	25	0	283	0	0	283	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	308	0
15:45	0	0	22	0	22	0	275	0	0	275	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	297	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>101</b>	<b>0</b>	<b>101</b>	<b>0</b>	<b>1115</b>	<b>0</b>	<b>0</b>	<b>1115</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1216</b>	<b>0</b>
16:00	0	0	30	0	30	0	287	0	0	287	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	318	0
16:15	0	0	32	0	32	0	337	0	0	337	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	371	0
16:30	0	0	31	0	31	0	265	0	0	265	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	296	0
16:45	0	0	15	0	15	0	210	0	0	210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	225	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>108</b>	<b>0</b>	<b>108</b>	<b>0</b>	<b>1099</b>	<b>0</b>	<b>0</b>	<b>1099</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1210</b>	<b>0</b>
17:00	0	0	21	0	21	0	165	0	0	165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	186	0
17:15	0	0	20	0	20	0	173	0	0	173	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	194	0
17:30	0	0	17	0	17	0	171	0	0	171	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	188	0
17:45	0	0	15	0	15	0	161	0	0	161	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	177	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>73</b>	<b>0</b>	<b>73</b>	<b>0</b>	<b>670</b>	<b>0</b>	<b>0</b>	<b>670</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>745</b>	<b>0</b>
<b>Grand Total</b>	<b>0</b>	<b>0</b>	<b>424</b>	<b>0</b>	<b>424</b>	<b>0</b>	<b>4624</b>	<b>0</b>	<b>0</b>	<b>4624</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5058</b>	<b>0</b>
Apprch %	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total %	0.0%	0.0%	8.4%	0.0%	8.4%	0.0%	91.4%	0.0%	0.0%	91.4%	0.2%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%

AM PEAK HOUR	I-280 NB Off Ramp Southbound					Sand Hill Road(WB) Westbound					I-280 NB Off Ramp Northbound					Sand Hill Road(WB) Eastbound					Total					
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL						
Peak Hour Analysis From 07:30 to 08:30																										
Peak Hour For Entire Intersection Begins at 07:30																										
7:30	0	0	4	0	4	0	140	0	0	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	144
7:45	0	0	1	0	1	0	126	0	0	126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	127
8:00	0	0	5	0	5	0	135	0	0	135	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	142
8:15	0	0	12	0	12	0	160	0	0	160	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	173
<b>Total Volume</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>561</b>	<b>0</b>	<b>0</b>	<b>561</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>586</b>
% App Total	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PHF	.000	.000	.458	.000	.458	.000	.877	.000	.000	.877	.375	.000	.000	.000	.375	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.847

NOON PEAK HOUR	I-280 NB Off Ramp Southbound					Sand Hill Road(WB) Westbound					I-280 NB Off Ramp Northbound					Sand Hill Road(WB) Eastbound					Total					
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL						
Peak Hour Analysis From 15:00 to 16:00																										
Peak Hour For Entire Intersection Begins at 15:00																										
15:00	0	0	31	0	31	0	280	0	0	280	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	311
15:15	0	0	23	0	23	0	277	0	0	277	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	300
15:30	0	0	25	0	25	0	283	0	0	283	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	308
15:45	0	0	22	0	22	0	275	0	0	275	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	297
<b>Total Volume</b>	<b>0</b>	<b>0</b>	<b>101</b>	<b>0</b>	<b>101</b>	<b>0</b>	<b>1115</b>	<b>0</b>	<b>0</b>	<b>1115</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1216</b>
% App Total	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PHF	.000	.000	.815	.000	.815	.000	.985	.000	.000	.985	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.977

PM PEAK HOUR	I-280 NB Off Ramp Southbound					Sand Hill Road(WB) Westbound					I-280 NB Off Ramp Northbound					Sand Hill Road(WB) Eastbound					Total					
	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL						
Peak Hour Analysis From 16:00 to 17:00																										
Peak Hour For Entire Intersection Begins at 16:00																										
16:00	0	0	30	0	30	0	287	0	0	287	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	318
16:15	0	0	32	0	32	0	337	0	0																	

**CLASSIFICATION**

Alpine Road between San Francisquito Creek Road and I-280

Day: Wednesday  
Date: 10/21/2015

City: San Mateo County  
Project #: 15-7795-001n

**North Bound**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	4
00:15	0	2	1	0	0	0	0	0	0	0	0	0	0	3
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:15	0	2	2	0	0	0	0	0	0	0	0	0	0	4
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	1	0	0	1	0	0	0	0	0	0	0	0	2
03:00	0	0	0	0	2	0	0	0	0	0	0	0	0	2
03:15	0	2	0	0	1	0	0	0	0	0	0	0	0	3
03:30	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:45	0	1	0	0	0	0	0	1	0	0	0	0	0	2
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:30	0	2	1	0	0	0	0	0	1	0	0	0	0	4
04:45	0	3	0	0	0	0	0	0	0	0	0	0	0	3
05:00	0	11	0	0	3	0	0	0	0	0	0	0	0	14
05:15	0	8	0	0	2	0	0	0	0	0	0	0	0	10
05:30	0	17	1	0	0	0	0	0	0	0	0	0	0	18
05:45	0	19	1	0	3	1	0	0	0	0	0	0	0	24
06:00	0	25	2	0	2	0	1	0	0	0	0	0	0	30
06:15	0	30	0	1	1	0	0	0	0	0	0	0	0	32
06:30	0	30	6	0	1	1	0	0	0	0	0	0	0	38
06:45	0	41	8	1	4	0	0	0	0	0	0	0	0	54
07:00	0	100	4	1	1	0	0	0	1	0	0	0	0	107
07:15	0	110	10	3	3	1	0	0	0	0	0	0	0	127
07:30	0	177	8	1	6	0	0	0	1	0	0	0	0	193
07:45	0	143	5	0	6	2	0	0	0	0	0	0	0	156
08:00	0	161	11	0	4	0	0	0	1	0	0	0	0	177
08:15	0	201	11	0	9	1	0	0	1	0	0	0	0	223
08:30	0	189	13	2	9	0	0	1	0	0	0	0	0	214
08:45	0	145	11	0	9	2	1	1	1	0	1	0	0	171
09:00	0	120	7	0	9	0	0	0	0	0	0	0	0	136
09:15	0	147	20	0	10	1	0	0	1	0	0	0	0	179
09:30	0	146	15	0	8	1	0	0	0	0	0	0	0	170
09:45	0	142	11	1	15	2	0	0	0	0	0	0	0	171
10:00	0	110	14	0	9	1	0	0	0	0	0	0	0	134
10:15	0	97	16	2	7	0	1	1	1	0	0	0	0	125
10:30	0	98	13	1	7	1	0	0	0	0	0	0	0	120
10:45	0	128	14	1	13	2	0	0	0	0	0	0	0	158
11:00	0	122	17	1	18	3	0	0	0	0	0	0	0	161
11:15	0	134	22	0	6	1	0	0	0	0	0	0	0	163
11:30	0	148	14	0	13	1	0	0	0	0	1	0	0	177
11:45	0	143	9	0	13	1	0	0	0	0	0	0	0	166
12:00 PM	0	123	17	0	16	0	0	0	0	0	0	0	0	156
12:15	0	133	17	0	9	0	0	1	0	0	0	0	0	160
12:30	0	118	21	0	15	1	0	0	0	0	0	0	0	155
12:45	0	123	19	1	13	2	1	1	0	0	0	0	0	160
13:00	0	116	17	0	11	3	0	0	0	0	1	0	0	148
13:15	0	115	28	1	26	3	0	0	0	0	0	0	0	173
13:30	0	131	15	3	10	0	0	0	0	0	0	0	0	159
13:45	0	114	20	1	8	0	0	0	0	0	0	0	0	143
14:00	1	125	15	1	11	1	0	0	0	0	0	0	0	154
14:15	3	110	22	2	12	1	0	0	0	0	0	0	0	150
14:30	0	124	16	0	12	1	1	0	1	0	0	0	0	155
14:45	0	105	23	1	16	1	0	0	0	0	0	0	0	146
15:00	0	186	17	1	19	0	0	1	0	0	0	0	0	224
15:15	1	167	25	1	18	1	0	0	0	0	0	0	0	213
15:30	0	144	30	1	20	1	0	0	0	0	0	0	0	196
15:45	0	175	28	0	10	1	0	1	0	0	0	0	0	215
16:00	1	201	38	1	15	0	0	1	0	0	0	0	0	257
16:15	0	160	28	0	17	0	0	0	0	0	2	0	0	207
16:30	0	136	35	0	16	2	0	0	1	0	0	0	0	190
16:45	0	156	21	0	9	1	0	0	0	0	0	0	0	187
17:00	0	139	22	0	7	0	0	0	0	0	1	0	0	169
17:15	0	138	18	0	6	0	0	0	0	0	0	0	0	162
17:30	0	164	20	0	8	0	0	0	0	0	0	0	0	192
17:45	0	151	16	0	6	0	0	0	0	0	0	0	0	173
18:00	0	122	9	1	6	0	0	0	0	0	0	0	0	138
18:15	0	103	9	0	6	0	0	0	0	0	0	0	0	118
18:30	0	118	11	0	4	0	0	0	0	0	0	0	0	133
18:45	0	116	3	1	4	0	0	0	0	0	0	0	0	124
19:00	0	97	10	0	4	0	0	0	0	0	0	0	0	111
19:15	0	91	4	0	4	0	0	0	0	0	0	0	0	99
19:30	0	70	1	0	2	0	0	0	0	0	0	0	0	73
19:45	0	48	4	0	1	0	0	0	0	0	0	0	0	53
20:00	0	73	4	0	5	0	0	0	0	0	0	0	0	82
20:15	0	57	6	0	2	0	0	0	0	0	0	0	0	65
20:30	0	51	4	0	2	0	0	0	0	0	0	0	0	57
20:45	0	48	1	0	1	0	0	0	0	0	0	0	0	50
21:00	0	30	1	0	2	0	0	0	0	0	0	0	0	33
21:15	0	54	2	0	0	0	0	0	0	0	0	0	0	56
21:30	0	34	5	0	1	0	0	0	0	0	0	0	0	40
21:45	0	15	0	0	0	0	0	0	0	0	0	0	0	15
22:00	0	21	2	0	0	0	0	0	0	0	0	0	0	23
22:15	0	23	1	0	2	0	0	0	0	0	0	0	0	26
22:30	0	18	1	0	0	0	0	0	0	0	0	0	0	19
22:45	0	8	2	0	0	0	0	0	0	0	0	0	0	10
23:00	0	13	1	0	2	0	0	0	0	0	0	0	0	16
23:15	0	5	2	0	0	0	0	0	0	0	0	0	0	7
23:30	0	6	2	0	0	0	0	0	0	0	0	0	0	8
23:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
<b>Totals</b>	<b>6</b>	<b>7544</b>	<b>882</b>	<b>31</b>	<b>553</b>	<b>41</b>	<b>5</b>	<b>9</b>	<b>10</b>		<b>6</b>			<b>9087</b>
% of Totals	0%	83%	10%	0%	6%	0%	0%	0%	0%		0%			100%

AM Volumes	0	2967	269	15	195	22	3	4	8	0	2	0	0	3485
% AM		33%	3%	0%	2%	0%	0%	0%	0%		0%			38%
AM Peak Hour		08:00	10:45	06:45	11:45	10:30	05:15	08:00	07:30		08:00			08:00
Volume		696	67	6	53	7	1	2	3		1			785
PM Volumes	6	4577	613	16	358	19	2	5	2	0	4	0	0	5602
% PM	0%	50%	7%	0%	4%	0%	0%	0%	0%		0%			62%
PM Peak Hour		13:30	15:15	15:45	13:30	14:45	12:30	12:00	13:45		16:15			15:15
Volume		4	687	129	7	73	9	1	2		3			881

Directional Peak Periods		AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	Volume	%	Volume	%	Volume	%	Volume	%
	1368	↔	15%	1254	↔	14%	1537	↔	17%
		↔			↔			↔	54%

Classification Definitions				
1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

### CLASSIFICATION

Alpine Road between San Francisquito Creek Road and I-280

Day: Wednesday  
Date: 10/21/2015

City: San Mateo County  
Project #: 15-7795-001ns

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	6
00:15	0	4	0	0	0	0	0	0	0	0	0	0	0	4
00:30	0	4	1	0	0	0	0	0	0	0	0	0	0	5
00:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:15	0	3	0	0	0	0	0	0	0	0	0	0	0	3
01:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	2	0	0	0	0	0	1	0	0	0	0	0	3
03:00	0	0	2	0	0	0	0	0	0	0	0	0	0	2
03:15	0	3	0	0	0	0	0	0	0	0	0	0	0	3
03:30	0	2	1	0	0	0	0	0	0	0	0	0	0	3
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	0	0	0	0	0	0	1	0	0	0	0	2
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	5	1	0	0	0	0	0	0	0	0	0	0	6
04:45	0	7	1	0	0	0	0	0	0	0	0	0	0	8
05:00	0	8	0	0	1	0	0	0	0	0	0	0	0	9
05:15	2	11	3	0	0	0	0	0	0	0	0	0	0	16
05:30	0	19	1	0	2	0	1	0	0	0	0	0	0	23
05:45	1	34	4	0	2	0	0	1	0	0	0	0	0	42
06:00	0	16	3	0	0	0	0	0	1	0	0	0	0	20
06:15	0	45	3	1	1	0	0	0	1	0	0	0	0	51
06:30	1	46	3	1	2	1	0	0	0	0	0	0	0	54
06:45	0	76	13	0	2	0	0	0	0	0	0	0	0	91
07:00	0	99	15	0	3	1	0	0	0	0	0	0	0	118
07:15	0	129	25	1	4	2	1	0	0	0	0	0	0	162
07:30	1	154	27	1	3	0	3	0	0	0	0	0	0	189
07:45	0	213	24	1	5	1	0	0	1	0	1	0	0	246
08:00	2	254	17	1	6	2	0	0	0	0	0	0	0	282
08:15	0	205	11	1	4	1	1	1	2	0	0	0	0	226
08:30	0	153	18	0	12	1	0	0	0	0	0	0	0	184
08:45	2	176	22	0	7	1	0	1	0	0	0	0	0	209
09:00	0	174	18	0	5	1	0	0	1	0	0	0	0	199
09:15	1	152	15	1	4	1	0	0	0	0	0	0	0	174
09:30	0	124	22	0	6	0	1	0	1	0	0	0	0	154
09:45	0	128	17	0	5	0	0	0	0	0	0	0	0	150
10:00	1	105	13	0	8	0	0	0	0	0	0	0	0	127
10:15	0	114	19	1	4	0	0	0	2	0	1	0	0	141
10:30	0	124	28	0	6	1	0	0	0	0	0	0	0	159
10:45	0	109	16	0	5	2	0	0	0	0	0	0	0	132
11:00	0	125	16	0	3	0	0	0	0	0	1	0	0	145
11:15	0	121	9	0	8	0	1	0	0	0	0	0	0	139
11:30	0	118	8	0	3	0	0	0	0	0	0	0	0	129
11:45	0	131	13	0	5	2	0	0	0	0	0	0	0	151
12:00 PM	0	129	8	0	3	0	0	0	0	0	0	0	0	140
12:15	3	132	21	2	6	3	0	0	0	0	0	0	0	167
12:30	1	127	13	1	3	2	1	0	0	0	0	0	0	148
12:45	0	134	16	1	7	0	0	0	0	0	0	0	0	158
13:00	0	113	12	0	2	3	0	0	1	0	0	0	0	131
13:15	0	115	14	1	5	0	0	0	0	0	0	0	0	135
13:30	0	104	14	0	4	0	0	0	0	0	0	0	0	122
13:45	0	135	13	0	2	2	0	0	0	0	0	0	0	152
14:00	0	125	13	1	2	0	0	0	0	0	0	0	0	141
14:15	0	131	7	1	3	1	0	0	0	0	0	0	0	143
14:30	1	148	9	3	4	0	0	0	0	0	0	0	0	165
14:45	1	160	10	0	2	2	1	1	0	0	0	0	0	177
15:00	1	155	8	1	0	2	1	0	0	0	0	0	0	168
15:15	1	151	10	0	4	0	0	0	1	0	0	0	0	167
15:30	0	180	11	0	3	0	0	0	0	0	0	0	0	194
15:45	0	201	7	1	3	0	0	0	0	0	0	0	0	212
16:00	0	175	12	0	0	1	0	1	0	0	0	0	0	189
16:15	1	174	5	0	2	0	0	0	1	0	0	0	0	183
16:30	0	194	7	0	2	0	0	0	0	0	0	0	0	203
16:45	3	161	5	0	0	0	0	0	0	0	0	0	0	169
17:00	1	209	4	0	0	0	0	0	0	0	0	0	0	214
17:15	0	203	7	0	1	0	0	0	0	0	0	0	0	211
17:30	2	192	9	0	1	0	0	0	0	0	0	0	0	204
17:45	2	203	5	0	1	0	0	0	0	0	0	0	0	211
18:00	0	187	3	0	1	0	0	0	0	0	0	0	0	191
18:15	0	144	6	0	1	0	0	0	0	0	0	0	0	151
18:30	2	138	2	0	0	1	0	0	0	0	0	0	0	143
18:45	0	138	1	0	3	0	0	0	0	0	0	0	0	142
19:00	1	115	3	0	0	0	0	0	0	0	0	0	0	119
19:15	0	75	1	0	0	0	0	0	0	0	0	0	0	76
19:30	0	71	2	0	0	0	0	0	0	0	0	0	0	73
19:45	1	106	2	0	0	0	0	0	0	0	0	0	0	109
20:00	0	70	3	0	0	0	0	0	0	0	0	0	0	73
20:15	1	82	1	0	1	0	0	0	0	0	0	0	0	85
20:30	1	80	0	0	1	0	0	0	0	0	0	0	0	82
20:45	0	80	1	0	0	0	0	0	0	0	0	0	0	81
21:00	0	51	3	0	0	0	0	0	0	0	0	0	0	54
21:15	0	68	2	0	0	0	0	1	0	0	0	0	0	71
21:30	0	52	2	0	0	0	0	0	0	0	0	0	0	54
21:45	0	52	2	0	0	0	0	0	0	0	0	0	0	54
22:00	0	45	2	0	0	0	0	0	0	0	0	0	0	47
22:15	0	38	0	0	0	0	0	0	0	0	0	0	0	38
22:30	0	23	1	0	0	0	0	0	0	0	0	0	0	24
22:45	0	16	1	0	0	0	0	0	0	0	0	0	0	17
23:00	0	12	0	0	0	0	0	0	0	0	0	0	0	12
23:15	0	15	0	0	0	0	0	0	0	0	0	0	0	15
23:30	0	9	3	0	0	0	0	0	0	0	0	0	0	12
23:45	0	9	0	0	1	0	0	0	0	0	0	0	0	10
<b>Totals</b>	<b>34</b>	<b>8634</b>	<b>670</b>	<b>21</b>	<b>184</b>	<b>34</b>	<b>11</b>	<b>6</b>	<b>14</b>		<b>3</b>			<b>9611</b>
% of Totals	0%	90%	7%	0%	2%	0%	0%	0%	0%		0%			100%

AM Volumes	11	3207	389	9	116	17	8	3	11	0	3	0	0	3774
% AM	0%	33%	4%	0%	1%	0%	0%	0%	0%		0%			39%
AM Peak Hour	08:00	07:30	07:15	07:15	08:00	11:45	06:45	08:00	05:30		10:15			07:30
Volume	4	826	93	4	29	7	4	2	3		2			943
PM Volumes	23	5427	281	12	68	17	3	3	3	0	0	0	0	5837
% PM	0%	56%	3%	0%	1%	0%	0%	0%	0%					61%
PM Peak Hour	16:45	17:00	12:15	13:45	12:00	12:15	14:15	14:00	12:15					17:00
Volume	6	807	62	5	19	8	2	1	1					840

Directional Peak Periods		AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	Volume	%	Volume	%	Volume	%	Volume	%
	1616	↔	17%	1153	↔	1584	↔	5258	↔
									55%

Classification Definitions			
1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers
			13 >=7-Axle Multi-Trailers

### CLASSIFICATION

Alpine Road between Stowe Lane and Junipero Serra Boulevard

Day: Wednesday  
Date: 10/21/2015

City: San Mateo County  
Project #: 15-7795-002n

**North Bound**

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	2
00:15	0	1	1	0	0	0	0	0	0	0	0	0	0	2
00:30	0	1	3	0	1	0	0	0	0	0	0	0	0	5
00:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1
01:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
01:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:30	0	1	2	0	0	0	0	0	0	0	0	0	0	3
01:45	0	4	0	0	0	0	0	0	0	0	0	0	0	4
02:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
02:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:30	0	1	3	0	1	0	0	0	0	0	0	0	0	5
02:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1
03:00	0	1	1	0	1	0	0	0	0	0	0	0	0	3
03:15	0	1	0	0	3	0	0	0	0	0	0	0	0	4
03:30	0	1	0	1	2	0	0	0	0	0	0	0	0	4
03:45	0	4	3	0	2	0	0	1	1	0	0	0	0	11
04:00	0	3	4	0	1	0	0	0	0	0	0	0	0	8
04:15	0	3	3	0	2	0	0	0	0	0	0	0	0	8
04:30	0	8	4	0	3	0	0	0	0	0	0	0	0	15
04:45	0	12	22	0	7	0	0	0	1	0	0	0	0	42
05:00	0	21	18	0	8	0	0	0	0	0	0	0	0	47
05:15	0	29	33	0	14	0	0	0	0	0	0	0	0	76
05:30	1	45	54	0	38	0	0	0	0	0	0	0	0	138
05:45	0	50	51	0	37	1	0	0	0	0	0	0	0	139
06:00	0	77	71	2	27	0	1	0	0	0	0	0	0	178
06:15	0	89	79	0	28	0	0	0	0	0	0	0	0	196
06:30	0	122	75	0	35	0	0	0	0	0	0	0	0	232
06:45	0	118	93	0	24	0	0	0	1	0	0	0	0	236
07:00	0	156	88	1	42	1	0	0	0	0	0	0	0	288
07:15	0	176	129	1	30	0	0	0	0	0	0	0	0	336
07:30	0	268	69	1	19	3	0	0	0	0	0	0	0	360
07:45	0	291	67	2	23	1	0	0	0	0	0	0	0	384
08:00	0	230	87	0	34	2	0	1	1	0	1	0	0	356
08:15	0	250	67	1	32	0	0	0	0	0	1	0	0	351
08:30	0	219	62	6	33	2	0	0	3	0	0	0	0	325
08:45	0	247	70	1	26	0	1	0	1	0	1	0	0	347
09:00	0	213	80	0	19	0	0	0	0	0	1	0	0	313
09:15	0	157	104	1	22	1	0	0	1	0	0	0	0	286
09:30	0	187	101	1	28	0	0	0	0	0	0	0	0	317
09:45	0	253	74	1	23	1	0	0	0	0	0	0	0	352
10:00	0	162	99	1	27	0	0	0	2	0	0	0	0	291
10:15	0	141	97	3	37	0	0	0	1	0	0	0	0	279
10:30	0	110	90	1	15	1	0	0	1	0	0	0	0	218
10:45	0	129	85	1	27	1	0	0	1	0	1	0	0	245
11:00	0	93	105	0	20	3	0	0	1	0	0	0	0	222
11:15	0	101	84	0	24	0	0	1	1	0	0	0	0	211
11:30	0	141	81	0	23	0	0	0	2	0	0	0	0	247
11:45	0	122	79	1	14	1	0	0	1	0	0	0	0	218
12:00 PM	0	80	95	1	20	0	0	0	0	0	0	0	0	196
12:15	0	85	74	1	22	1	0	0	0	0	0	0	0	183
12:30	0	74	84	0	20	0	0	0	2	0	0	0	0	180
12:45	0	81	68	0	26	2	0	1	1	0	0	0	0	179
13:00	0	89	54	0	26	2	0	1	1	0	1	0	0	174
13:15	0	86	77	1	16	3	0	0	1	0	0	0	0	184
13:30	0	89	76	1	23	0	0	3	0	0	0	0	0	192
13:45	0	72	82	0	14	0	0	0	0	0	1	0	0	169
14:00	0	69	76	1	13	2	0	0	0	0	0	0	0	161
14:15	0	74	94	0	12	0	0	1	1	0	0	0	0	182
14:30	0	91	95	1	14	0	0	0	1	0	0	0	0	202
14:45	1	83	75	1	15	0	0	0	0	0	1	0	0	176
15:00	0	87	70	2	10	0	0	1	1	0	0	0	0	171
15:15	0	82	66	0	16	1	0	0	0	0	1	0	0	166
15:30	1	84	60	2	17	2	0	0	0	0	0	0	0	166
15:45	0	83	73	0	16	1	0	0	0	0	0	0	0	173
16:00	0	96	78	1	13	0	0	0	0	0	0	0	0	188
16:15	0	70	73	0	15	1	0	0	0	0	0	0	0	159
16:30	0	82	76	0	15	0	0	0	0	0	0	0	0	173
16:45	0	91	89	0	15	0	0	1	0	0	0	0	0	196
17:00	0	104	76	0	15	0	0	0	0	0	0	0	0	195
17:15	0	104	101	0	12	0	0	0	0	0	0	0	0	217
17:30	0	129	54	1	12	0	0	2	0	0	0	0	0	198
17:45	0	122	38	0	7	0	0	2	0	0	1	0	0	170
18:00	0	123	34	0	4	0	0	0	0	0	0	0	0	161
18:15	0	122	26	1	9	0	0	3	0	0	1	0	0	162
18:30	0	114	73	0	4	0	0	1	0	0	0	0	0	192
18:45	0	78	61	1	5	0	0	0	0	0	0	0	0	145
19:00	0	51	53	0	4	0	0	0	0	0	0	0	0	108
19:15	0	56	38	0	2	0	0	0	0	0	0	0	0	96
19:30	0	38	37	0	4	0	0	0	0	0	0	0	0	79
19:45	0	32	30	0	2	0	0	0	0	0	0	0	0	64
20:00	1	28	24	0	7	0	0	0	0	0	0	0	0	60
20:15	0	36	29	0	3	0	0	0	0	0	0	0	0	68
20:30	0	28	23	0	6	0	0	0	0	0	0	0	0	57
20:45	0	23	21	0	1	0	0	0	0	0	0	0	0	45
21:00	0	17	20	0	3	0	0	0	0	0	0	0	0	40
21:15	0	13	18	0	1	0	0	0	0	0	0	0	0	32
21:30	0	28	17	0	3	0	0	0	0	0	0	0	0	48
21:45	0	12	29	2	3	0	0	0	0	0	0	0	0	46
22:00	0	9	12	0	2	0	0	0	0	0	0	0	0	23
22:15	0	21	14	0	2	0	0	0	0	0	0	0	0	37
22:30	1	11	14	0	2	0	0	0	0	0	0	0	0	28
22:45	0	14	12	0	0	0	0	0	0	0	0	0	0	26
23:00	0	10	4	0	1	0	0	0	0	0	0	0	0	15
23:15	0	5	4	0	0	0	0	0	0	0	0	0	0	9
23:30	0	10	8	0	0	0	0	0	0	0	0	0	0	18
23:45	0	3	4	0	1	0	0	0	0	0	0	0	0	8
<b>Totals</b>	<b>5</b>	<b>7230</b>	<b>4653</b>	<b>43</b>	<b>1205</b>	<b>33</b>	<b>2</b>	<b>19</b>	<b>27</b>		<b>11</b>			<b>13228</b>
<b>% of Totals</b>	<b>0%</b>	<b>55%</b>	<b>35%</b>	<b>0%</b>	<b>9%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>		<b>0%</b>			<b>100%</b>

<b>AM Volumes</b>	1	4241	2244	26	752	18	2	3	19	0	5	0	0	7311
<b>% AM</b>	0%	32%	17%	0%	6%	0%	0%	0%	0%	0%	0%	0%	0%	55%
<b>AM Peak Hour</b>	04:45	07:30	06:30	07:45	06:30	07:15	05:15	03:00	08:00		08:00			07:30
<b>Volume</b>	1	1039	385	9	131	6	1	1	5		3			1451
<b>PM Volumes</b>	4	2989	2409	17	453	15	0	16	8	0	6	0	0	5917
<b>% PM</b>	0%	23%	18%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	45%
<b>PM Peak Hour</b>	14:45	17:30	13:45	14:45	12:15	12:30		17:30	12:30		13:00			16:45
<b>Volume</b>	2	496	347	5	94	7		7	5		2			806

Directional Peak Periods		AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	Volume	%	Volume	%	Volume	%	Volume	%
	2747	↔	21%	1457	↔	11%	1496	↔	11%
		↔			↔			↔	57%

Classification Definitions			
1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers

### CLASSIFICATION

Alpine Road between Stowe Lane and Junipero Serra Boulevard

Day: Wednesday  
Date: 10/21/2015

City: San Mateo County  
Project #: 15-7795-002ns

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	7	4	0	2	0	0	0	0	0	0	0	0	13
00:15	0	7	6	0	0	0	0	0	0	0	0	0	0	13
00:30	0	2	3	0	0	0	0	0	0	0	0	0	0	5
00:45	0	3	1	0	0	0	0	0	0	0	0	0	0	4
01:00	0	7	3	0	0	0	0	0	0	0	0	0	0	10
01:15	0	0	0	0	1	0	0	0	0	0	0	0	0	1
01:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3
01:45	0	1	2	0	0	0	0	0	0	0	0	0	0	3
02:00	0	4	0	0	1	0	0	0	0	0	0	0	0	5
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	2	4	0	0	0	0	0	0	0	0	0	0	6
02:45	0	2	1	0	0	0	0	0	0	0	0	0	0	3
03:00	0	2	0	0	1	0	0	0	0	0	0	0	0	3
03:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3
03:45	0	0	3	0	0	0	0	0	0	0	0	0	0	3
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:15	0	0	0	0	3	0	0	0	0	0	0	0	0	3
04:30	0	3	3	1	1	0	0	0	1	0	0	0	0	9
04:45	0	1	2	0	1	0	0	0	0	0	0	0	0	4
05:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
05:15	0	5	4	0	1	0	0	0	0	0	0	0	0	10
05:30	0	10	10	0	0	1	0	0	0	0	0	0	0	21
05:45	0	12	11	0	5	0	0	0	0	0	0	0	0	28
06:00	0	10	10	0	1	0	0	0	0	0	0	0	0	21
06:15	0	22	11	1	3	0	0	0	0	0	0	0	0	37
06:30	0	26	18	0	4	0	0	0	0	0	0	0	0	48
06:45	0	29	18	0	7	0	0	0	0	0	0	0	0	54
07:00	0	46	31	1	9	1	0	0	0	0	0	0	0	88
07:15	0	49	36	2	10	0	1	0	0	0	0	0	0	98
07:30	1	74	77	2	14	0	0	0	1	0	0	0	0	169
07:45	0	92	61	0	13	0	0	1	3	0	0	0	0	170
08:00	0	74	84	2	8	0	0	1	0	0	0	0	0	169
08:15	0	63	60	0	11	1	0	0	1	0	0	0	0	136
08:30	0	57	56	0	12	0	0	1	0	0	0	0	0	126
08:45	0	53	70	2	21	1	0	1	0	0	0	0	0	148
09:00	0	65	54	2	20	1	0	0	3	0	0	0	0	145
09:15	0	72	56	3	18	1	0	0	1	0	0	0	0	151
09:30	0	75	52	0	13	0	0	0	2	0	0	0	0	142
09:45	5	57	58	0	20	2	0	0	0	0	0	0	0	142
10:00	0	45	51	0	10	0	0	1	0	0	0	0	0	107
10:15	0	40	47	3	16	0	0	0	0	0	0	0	0	106
10:30	0	52	54	0	20	1	0	2	2	0	0	0	0	131
10:45	0	49	50	1	15	0	0	0	2	0	0	0	0	117
11:00	0	53	67	5	27	0	0	0	0	0	0	0	0	152
11:15	0	53	58	1	15	0	0	0	0	0	0	0	0	127
11:30	0	47	76	0	16	0	0	0	1	0	0	0	0	140
11:45	0	62	54	1	19	2	0	0	1	0	0	0	0	139
12:00 PM	0	51	75	1	28	0	0	1	2	0	0	0	0	158
12:15	0	59	84	1	31	0	0	0	0	0	0	0	0	175
12:30	3	56	78	1	15	1	0	0	0	0	0	0	0	154
12:45	0	64	78	1	25	1	0	0	0	0	0	0	0	169
13:00	0	71	68	1	13	2	0	0	0	0	0	0	0	155
13:15	1	61	74	1	26	0	0	0	0	0	0	0	0	163
13:30	0	59	78	1	20	0	0	0	1	0	0	0	0	159
13:45	0	80	84	1	27	1	0	1	1	0	0	0	0	195
14:00	0	88	93	2	34	0	0	0	0	0	0	0	0	217
14:15	1	94	92	2	25	0	0	0	0	0	0	0	0	214
14:30	0	106	113	2	39	1	0	0	0	0	0	0	0	261
14:45	0	116	128	2	30	0	0	0	0	0	0	0	0	276
15:00	0	136	134	3	45	0	0	0	1	0	0	0	0	319
15:15	0	108	94	0	25	0	0	1	0	0	0	0	0	228
15:30	0	106	105	3	33	1	0	1	0	0	1	0	0	250
15:45	1	111	115	3	24	1	0	2	1	0	0	0	0	258
16:00	0	103	99	2	31	0	0	1	0	0	0	0	0	236
16:15	0	125	96	0	33	2	0	0	0	0	0	0	0	256
16:30	0	135	119	0	24	0	0	0	0	0	0	0	0	278
16:45	0	137	103	0	23	0	0	0	0	0	0	0	0	263
17:00	0	157	127	0	21	0	0	0	0	0	0	0	0	305
17:15	0	177	142	0	19	0	0	0	0	0	0	0	0	338
17:30	0	144	120	0	14	0	0	0	0	0	0	0	0	278
17:45	0	121	147	2	12	0	0	0	0	0	0	0	0	282
18:00	0	114	122	0	13	0	0	0	0	0	0	0	0	249
18:15	0	114	106	1	9	0	0	0	0	0	0	0	0	230
18:30	0	128	72	0	5	0	0	0	0	0	0	0	0	205
18:45	0	134	85	1	11	0	0	0	0	0	0	0	0	231
19:00	0	103	68	2	8	0	0	0	0	0	0	0	0	181
19:15	0	121	65	0	3	0	0	0	0	0	0	0	0	189
19:30	0	106	55	0	6	0	0	0	0	0	0	0	0	167
19:45	0	95	78	3	4	0	0	0	0	0	0	0	0	180
20:00	0	86	59	1	4	0	0	0	0	0	0	0	0	150
20:15	0	74	53	0	3	0	0	0	0	0	0	0	0	130
20:30	0	73	47	1	3	0	0	0	0	0	0	0	0	124
20:45	0	86	42	0	4	0	0	0	0	0	0	0	0	132
21:00	0	66	41	0	1	0	0	0	0	0	0	0	0	108
21:15	0	72	45	0	3	0	0	0	0	0	1	0	0	121
21:30	0	59	27	0	4	0	0	0	0	0	0	0	0	90
21:45	0	51	25	0	5	0	0	0	0	0	0	0	0	81
22:00	0	61	29	0	3	0	0	0	0	0	0	0	0	93
22:15	0	35	17	0	1	0	0	0	0	0	0	0	0	53
22:30	0	18	12	0	1	0	0	0	0	0	0	0	0	31
22:45	0	30	5	0	1	0	0	0	0	0	0	0	0	36
23:00	0	17	13	0	1	0	0	0	0	0	0	0	0	31
23:15	0	18	9	0	1	0	0	0	0	0	0	0	0	28
23:30	0	20	10	0	0	0	0	0	0	0	0	0	0	30
23:45	0	17	4	0	0	0	0	0	0	0	0	0	0	21
<b>Totals</b>	<b>12</b>	<b>5508</b>	<b>4802</b>	<b>65</b>	<b>1049</b>	<b>21</b>	<b>1</b>	<b>14</b>	<b>24</b>		<b>2</b>			<b>11498</b>
% of Totals	0%	48%	42%	1%	9%	0%	0%	0%	0%		0%			100%

AM Volumes	6	1345	1267	27	338	11	1	7	18	0	0	0	0	3020
% AM	0%	12%	11%	0%	3%	0%	0%	0%	0%					26%
AM Peak Hour	09:00	07:30	11:45	10:15	11:30	09:00	06:30	07:45	08:45					07:30
Volume	5	303	291	9	94	4	1	3	6					644
PM Volumes	6	4163	3535	38	711	10	0	7	6	0	2	0	0	8478
% PM	0%	36%	31%	0%	6%	0%	0%	0%	0%		0%			74%
PM Peak Hour	12:30	16:45	17:00	14:15	14:15	12:15		15:15	12:00		14:45			17:00
Volume	4	615	536	9	139	4		5	2		1			1203

Directional Peak Periods	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
All Classes	Volume	%	Volume	%	Volume	%	Volume	%
	1104	10%	1328	12%	2236	19%	6830	59%

Classification Definitions			
1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers
			13 >=7-Axle Multi-Trailers

**CLASSIFICATION**

Alpine Road between I-280 and Alpine Access Road

Day: Wednesday  
Date: 10/21/2015

City: San Mateo County  
Project #: 15-7795-003n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	1	3	0	0	0	0	0	0	0	0	0	0	0	4
00:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
00:30	0	3	1	0	0	0	0	0	0	0	0	0	0	4
00:45	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:30	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:45	1	5	0	0	0	0	0	0	0	0	0	0	0	6
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:30	0	4	1	0	0	0	0	0	0	0	0	0	0	5
02:45	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	1	2	2	0	0	0	0	0	0	0	0	0	0	5
03:15	0	2	1	0	0	0	0	0	0	0	0	0	0	3
03:30	0	2	1	0	0	1	0	0	0	0	0	0	0	4
03:45	0	8	0	0	1	0	0	1	1	0	0	0	0	11
04:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
04:15	0	9	1	0	0	0	0	0	0	0	0	0	0	10
04:30	0	18	2	0	0	0	0	0	1	0	0	0	0	21
04:45	0	40	4	0	0	0	0	0	0	0	0	0	0	44
05:00	0	49	4	0	0	0	0	0	0	0	0	0	0	53
05:15	0	77	4	0	0	0	0	0	0	0	0	0	0	81
05:30	1	131	22	0	2	0	0	0	0	0	0	0	0	156
05:45	0	149	19	0	0	1	0	0	0	0	0	0	0	169
06:00	0	180	18	0	1	1	1	0	0	0	0	0	0	201
06:15	0	194	16	0	1	0	0	0	0	0	0	0	0	211
06:30	0	235	15	0	2	0	0	0	0	0	0	0	0	252
06:45	0	257	9	0	3	0	0	0	1	0	0	0	0	270
07:00	0	282	22	1	2	1	0	0	0	0	0	0	0	308
07:15	0	354	18	1	3	0	0	0	0	0	0	0	0	376
07:30	0	370	15	1	7	3	0	0	1	0	0	0	0	397
07:45	0	358	17	2	8	1	0	0	0	0	1	0	0	387
08:00	0	333	21	0	5	1	0	0	1	0	0	0	0	361
08:15	1	355	26	1	8	1	0	0	1	0	0	0	0	393
08:30	0	293	23	4	11	1	0	0	3	0	1	0	0	336
08:45	0	311	13	0	5	0	0	1	1	0	2	0	0	333
09:00	0	305	10	0	2	0	0	0	1	0	0	0	0	318
09:15	0	303	10	0	3	1	0	0	0	0	0	0	0	317
09:30	0	325	10	0	8	0	0	0	0	0	0	0	0	343
09:45	1	355	15	1	6	1	0	0	0	0	0	0	0	379
10:00	0	263	15	0	6	1	0	0	2	0	0	0	0	287
10:15	0	267	17	2	4	0	0	0	0	0	0	0	0	292
10:30	0	204	8	0	3	1	0	0	1	0	0	0	0	217
10:45	0	218	14	1	4	1	0	0	1	0	0	0	0	239
11:00	0	204	10	0	3	3	0	0	1	0	0	0	0	221
11:15	0	199	10	0	1	0	0	0	2	0	0	0	0	212
11:30	0	223	11	0	1	0	0	0	3	0	0	0	0	238
11:45	0	207	5	0	3	1	0	0	0	0	1	0	0	217
12:00 PM	0	178	11	0	3	0	0	0	0	0	0	0	0	192
12:15	0	175	4	0	4	1	0	0	0	0	0	0	0	184
12:30	0	164	11	0	0	1	0	0	2	0	0	0	0	178
12:45	0	158	14	0	1	1	0	0	1	0	0	0	0	175
13:00	0	168	15	0	1	2	0	0	1	0	1	0	0	188
13:15	0	166	10	1	5	3	0	0	1	0	0	0	0	186
13:30	0	184	14	1	0	0	0	0	0	0	0	0	0	199
13:45	0	152	6	0	3	0	0	0	1	0	0	0	0	162
14:00	0	157	8	1	3	2	0	0	0	0	0	0	0	171
14:15	0	175	5	1	1	0	0	0	1	0	0	0	0	183
14:30	0	177	5	0	2	0	0	0	1	0	0	0	0	185
14:45	1	175	7	1	1	0	0	0	0	0	1	0	0	186
15:00	0	157	4	0	5	0	0	0	1	0	0	0	0	167
15:15	0	140	11	0	1	1	0	0	0	0	1	0	0	154
15:30	1	175	11	1	1	1	0	0	1	0	0	0	0	191
15:45	0	162	9	0	1	1	0	0	0	0	0	0	0	173
16:00	0	174	7	0	1	0	0	0	0	0	0	0	0	182
16:15	0	155	9	0	1	1	0	0	0	0	0	0	0	166
16:30	0	164	8	0	0	0	0	0	0	0	0	0	0	172
16:45	0	176	7	0	0	0	0	0	0	0	0	0	0	183
17:00	0	189	5	0	0	0	0	0	0	0	0	0	0	194
17:15	0	196	7	0	1	0	0	0	0	0	0	0	0	204
17:30	0	199	5	1	1	0	0	0	0	0	0	0	0	206
17:45	0	210	6	0	0	0	0	0	0	0	0	0	0	216
18:00	0	184	7	0	2	0	0	1	0	0	0	0	0	194
18:15	0	180	5	0	0	1	0	0	0	0	0	0	0	186
18:30	1	182	2	0	0	0	0	0	0	0	0	0	0	185
18:45	0	131	2	0	0	1	0	0	0	0	0	0	0	134
19:00	0	99	2	0	0	0	0	0	0	0	0	0	0	101
19:15	0	95	0	0	0	0	0	0	0	0	0	0	0	95
19:30	0	71	1	0	0	0	0	0	0	0	0	0	0	72
19:45	0	61	1	0	0	0	0	0	0	0	0	0	0	62
20:00	1	64	6	0	0	0	0	0	0	0	0	0	0	71
20:15	0	66	2	0	0	0	0	0	0	0	0	0	0	68
20:30	0	49	3	0	0	0	0	0	0	0	0	0	0	52
20:45	0	43	0	0	0	0	0	0	0	0	0	0	0	43
21:00	0	41	2	0	0	0	0	0	0	0	0	0	0	43
21:15	0	33	0	0	0	0	0	0	0	0	0	0	0	33
21:30	0	42	2	0	1	0	0	0	0	0	0	0	0	45
21:45	0	42	0	1	1	0	0	0	0	0	0	0	0	44
22:00	0	28	0	0	0	0	0	0	0	0	0	0	0	28
22:15	0	37	1	0	0	0	0	0	0	0	0	0	0	38
22:30	1	20	2	0	0	0	0	0	0	0	0	0	0	23
22:45	0	28	0	0	0	0	0	0	0	0	0	0	0	28
23:00	0	15	1	0	0	0	0	0	0	0	0	0	0	16
23:15	0	11	0	0	0	0	0	0	0	0	0	0	0	11
23:30	0	17	0	0	0	0	0	0	0	0	0	0	0	17
23:45	0	7	0	0	0	0	0	0	0	0	0	0	0	7
<b>Totals</b>	<b>11</b>	<b>12787</b>	<b>648</b>	<b>22</b>	<b>143</b>	<b>36</b>	<b>1</b>	<b>3</b>	<b>33</b>		<b>8</b>			<b>13692</b>
% of Totals	0%	93%	5%	0%	1%	0%	0%	0%	0%		0%			100%

AM Volumes	6	7115	410	14	103	20	1	2	23	0	5	0	0	7699
% AM	0%	52%	3%	0%	1%	0%	0%	0%	0%		0%			56%
AM Peak Hour		07:30	07:45	07:45	07:45	07:30	05:15	03:00	10:45		08:00			07:30
Volume	1	1416	87	7	32	6	1	1	7		3			1538
PM Volumes	5	5672	238	8	40	16	0	1	10	0	3	0	0	5993
% PM	0%	41%	2%	0%	0%	0%	0%	0%	0%		0%			44%
PM Peak Hour		14:45	17:00	12:45	13:15	13:15	12:30	17:15	12:30		14:30			17:00
Volume	2	794	53	3	11	7		1	5		2			820

Directional Peak Periods		AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes			
All Classes	Volume	Volume	%	Volume	%	Volume	%	Volume	%		
	2891	↔	21%	1464	↔	11%	1523	↔	11%		
		↔			↔			↔	7814	↔	57%

Classification Definitions			
1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers
			13 >=7-Axle Multi-Trailers

### CLASSIFICATION

Alpine Road between I-280 and Alpine Access Road

Day: Wednesday  
Date: 10/21/2015

City: San Mateo County  
Project #: 15-7795-003ns

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
00:00 AM	0	8	2	0	1	0	0	0	0	0	0	0	0	11
00:15	0	13	0	0	0	0	0	0	0	0	0	0	0	13
00:30	0	6	1	0	0	0	0	0	0	0	0	0	0	7
00:45	0	5	0	0	0	0	0	0	0	0	0	0	0	5
01:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
01:15	0	2	1	0	0	0	0	0	0	0	0	0	0	3
01:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
01:45	0	1	1	0	0	0	0	0	0	0	0	0	0	2
02:00	0	4	0	0	1	0	0	0	0	0	0	0	0	5
02:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:30	0	4	0	0	0	0	0	0	0	0	0	0	0	4
02:45	0	2	2	0	0	0	0	0	0	0	0	0	0	4
03:00	0	2	0	0	1	0	0	0	0	0	0	0	0	3
03:15	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:30	0	3	0	0	0	0	0	0	0	0	0	0	0	3
03:45	0	3	1	0	0	0	0	0	0	0	0	0	0	4
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:15	0	0	0	0	3	0	0	0	0	0	0	0	0	3
04:30	0	3	1	0	1	1	0	1	0	0	0	0	0	7
04:45	0	5	2	0	0	0	0	0	0	0	0	0	0	7
05:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
05:15	0	7	1	0	0	0	0	0	0	0	0	0	0	8
05:30	0	19	1	0	0	0	0	0	0	0	0	0	0	20
05:45	0	20	5	0	3	0	0	0	0	0	0	0	0	28
06:00	0	10	4	0	1	0	0	0	0	0	0	0	0	15
06:15	0	34	2	1	3	0	0	0	0	0	0	0	0	40
06:30	0	31	8	0	2	0	0	0	0	0	0	0	0	41
06:45	0	44	9	0	6	0	0	0	0	0	0	0	0	59
07:00	0	59	13	1	5	0	0	0	0	0	0	0	0	78
07:15	0	73	13	2	5	0	0	0	0	0	0	0	0	93
07:30	0	119	13	2	7	0	0	2	0	0	0	0	0	143
07:45	0	147	21	0	6	0	0	3	0	0	0	0	0	177
08:00	1	134	26	1	6	0	0	1	0	0	0	0	0	169
08:15	0	115	15	1	9	0	0	0	0	0	0	0	0	140
08:30	0	94	21	0	8	1	0	1	0	0	0	0	0	125
08:45	1	103	22	1	11	1	0	0	0	0	0	0	0	139
09:00	0	107	16	1	18	0	0	1	0	0	0	0	0	143
09:15	0	112	20	3	14	1	0	1	0	0	0	0	0	151
09:30	0	119	17	0	9	0	0	2	1	0	0	0	0	148
09:45	0	102	14	0	9	1	0	0	0	0	0	0	0	126
10:00	0	87	15	0	10	0	0	1	0	0	0	0	0	113
10:15	0	90	16	3	13	0	0	1	0	0	0	0	0	123
10:30	0	98	19	0	16	1	0	1	1	0	0	0	0	136
10:45	0	94	19	1	10	0	0	2	0	0	0	0	0	126
11:00	0	95	24	2	20	0	0	1	0	0	0	0	0	142
11:15	0	104	17	1	14	0	0	0	0	0	0	0	0	136
11:30	0	105	21	0	11	0	0	0	0	0	0	0	0	137
11:45	0	112	17	1	15	1	0	0	0	0	0	0	0	146
12:00 PM	0	110	23	1	19	0	0	2	0	0	0	0	0	155
12:15	0	120	29	1	31	0	0	1	0	0	0	0	0	182
12:30	0	122	21	1	13	1	0	0	0	0	0	0	0	158
12:45	0	139	19	1	19	1	0	0	0	0	0	0	0	179
13:00	0	122	29	1	10	0	0	1	0	0	0	0	0	163
13:15	1	115	33	1	13	0	0	0	0	0	0	0	0	163
13:30	0	107	26	1	17	0	0	0	0	0	0	0	0	151
13:45	0	146	29	0	17	0	0	0	0	0	0	0	0	192
14:00	0	161	36	3	14	0	0	0	0	0	0	0	0	214
14:15	0	181	25	1	19	0	0	0	1	0	0	0	0	227
14:30	0	204	48	3	25	0	0	0	0	0	0	0	0	280
14:45	1	218	40	2	14	0	0	0	0	0	0	0	0	275
15:00	0	224	30	4	26	1	0	1	0	0	0	0	0	286
15:15	0	231	28	0	20	0	0	1	1	0	0	0	0	281
15:30	0	227	27	1	24	0	0	4	0	0	0	0	0	283
15:45	1	242	21	3	20	1	0	1	0	0	0	0	0	289
16:00	0	214	27	1	17	0	0	0	1	0	0	0	0	260
16:15	1	225	35	0	11	2	0	1	1	0	0	0	0	276
16:30	1	257	30	0	19	0	0	0	0	0	0	0	0	307
16:45	1	240	38	0	14	0	0	0	0	0	0	0	0	293
17:00	1	255	37	0	12	0	0	0	0	0	0	0	0	305
17:15	0	315	34	0	9	0	0	0	0	0	0	0	0	358
17:30	1	247	29	0	8	0	0	0	0	0	1	0	0	286
17:45	0	257	31	1	9	0	0	0	0	0	0	0	0	298
18:00	1	206	23	1	7	0	0	0	0	0	0	0	0	238
18:15	0	227	17	1	5	0	0	1	0	0	0	0	0	251
18:30	0	195	9	0	5	0	0	0	0	0	0	0	0	209
18:45	0	216	26	1	6	0	0	0	0	0	0	0	0	249
19:00	1	175	12	2	3	0	0	0	0	0	0	0	0	193
19:15	0	174	13	0	3	0	0	0	0	0	0	0	0	190
19:30	0	152	18	0	4	0	0	0	0	0	0	0	0	174
19:45	0	171	12	3	3	0	0	0	0	0	0	0	0	189
20:00	1	129	13	1	2	0	0	0	0	0	0	0	0	146
20:15	0	119	19	0	2	0	0	0	0	0	0	0	0	140
20:30	0	103	10	1	2	0	0	0	0	0	0	0	0	116
20:45	1	123	9	0	3	0	0	0	0	0	0	0	0	136
21:00	0	98	7	0	2	0	0	0	0	0	0	0	0	107
21:15	0	101	11	1	3	0	0	0	0	0	0	0	0	116
21:30	0	79	6	0	4	0	0	0	0	0	0	0	0	89
21:45	1	73	8	0	3	0	0	0	0	0	0	0	0	85
22:00	0	78	5	0	2	0	0	0	0	0	0	0	0	85
22:15	0	55	4	0	1	0	0	0	0	0	0	0	0	60
22:30	0	25	5	0	0	0	0	0	0	0	0	0	0	30
22:45	0	33	3	0	1	0	0	0	0	0	0	0	0	37
23:00	0	26	2	0	1	0	0	0	0	0	0	0	0	29
23:15	0	26	2	0	0	0	0	0	0	0	0	0	0	28
23:30	0	31	2	0	0	0	0	0	0	0	0	0	0	33
23:45	0	20	1	0	0	0	0	0	0	0	0	0	0	21
<b>Totals</b>	<b>15</b>	<b>9631</b>	<b>1363</b>	<b>58</b>	<b>700</b>	<b>13</b>		<b>31</b>	<b>6</b>		<b>1</b>			<b>11818</b>
% of Totals	0%	81%	12%	0%	6%	0%		0%	0%		0%			100%

AM Volumes	2	2317	401	21	238	7	0	18	2	0	0	0	0	3006
% AM	0%	20%	3%	0%	2%	0%		0%	0%					25%
AM Peak Hour	08:00	07:30	11:30	10:15	11:45	08:30		07:15	08:45					11:45
Volume	2	515	90	6	78	3		6	1					641
PM Volumes	13	7314	962	37	462	6	0	13	4	0	1	0	0	8812
% PM	0%	62%	8%	0%	4%	0%		0%	0%		0%			75%
PM Peak Hour	16:15	17:00	14:00	14:15	15:00	15:30		15:00	15:15		16:45			16:30
Volume	4	1074	149	10	90	3		7	2		1			1263

Directional Peak Periods		AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes				
All Classes	Volume	Volume	%	Volume	%	Volume	%	Volume	%			
	1064	↔	9%	1343	↔	11%	2383	↔	20%	7028	↔	59%

Classification Definitions				
1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

# Spot Speed Study

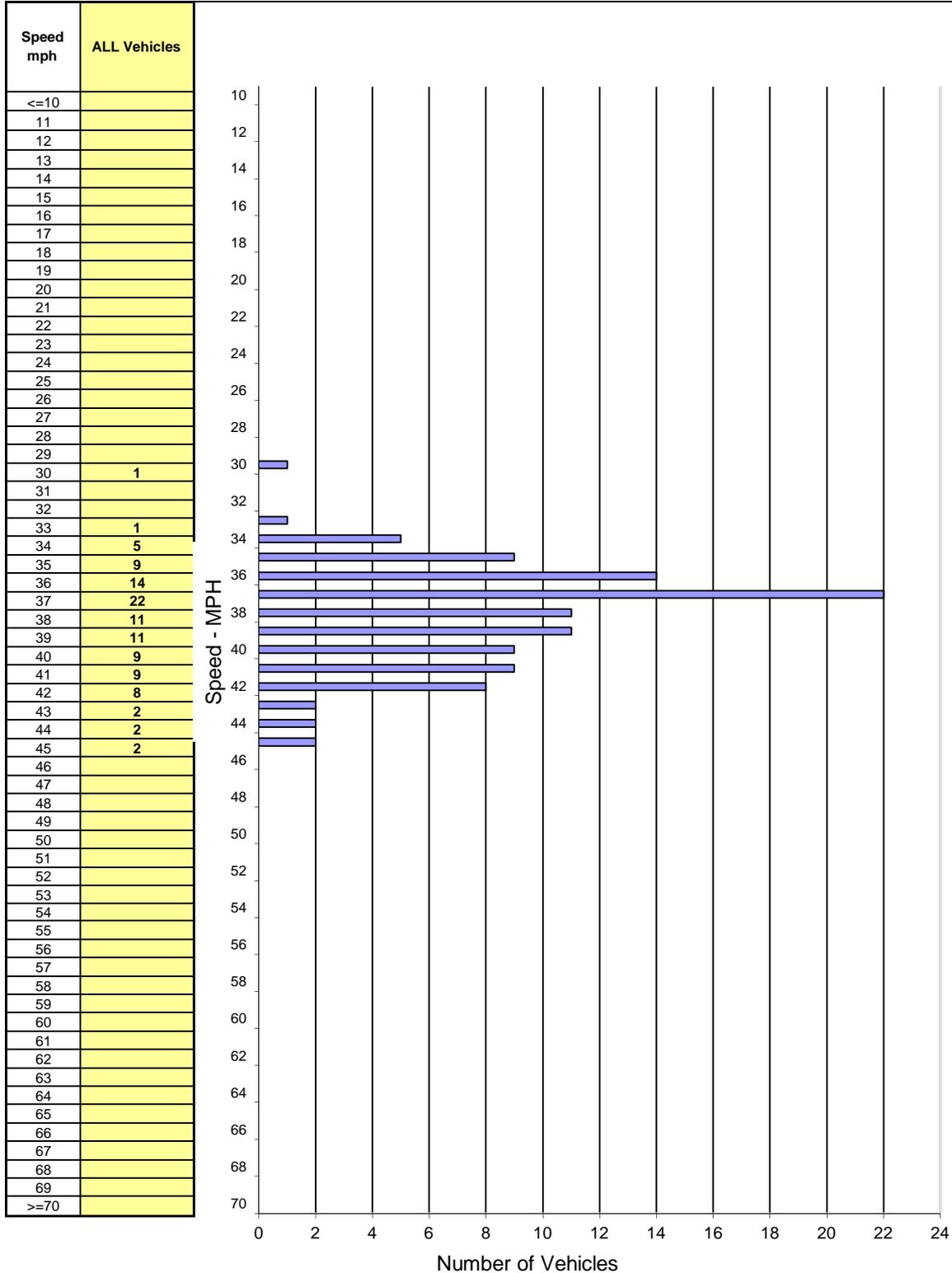
Prepared by: National Data & Surveying Services

## City of San Mateo

Survey Time: 9:45 - 10:20  
 DATE: 10/20/2015  
 DAY: Tuesday

Street Width: 36 Ft  
 Location: Alpine Road 350' North of Bishop Lane  
 Posted Speed: 45 MPH  
 Project #: 15-7796-001

### Northbound Spot Speeds



SPEED PARAMETERS									
Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
ALL	106	30 - 45	38 mph	41 mph	34 - 43	100	94%	1% / 2	4% / 4

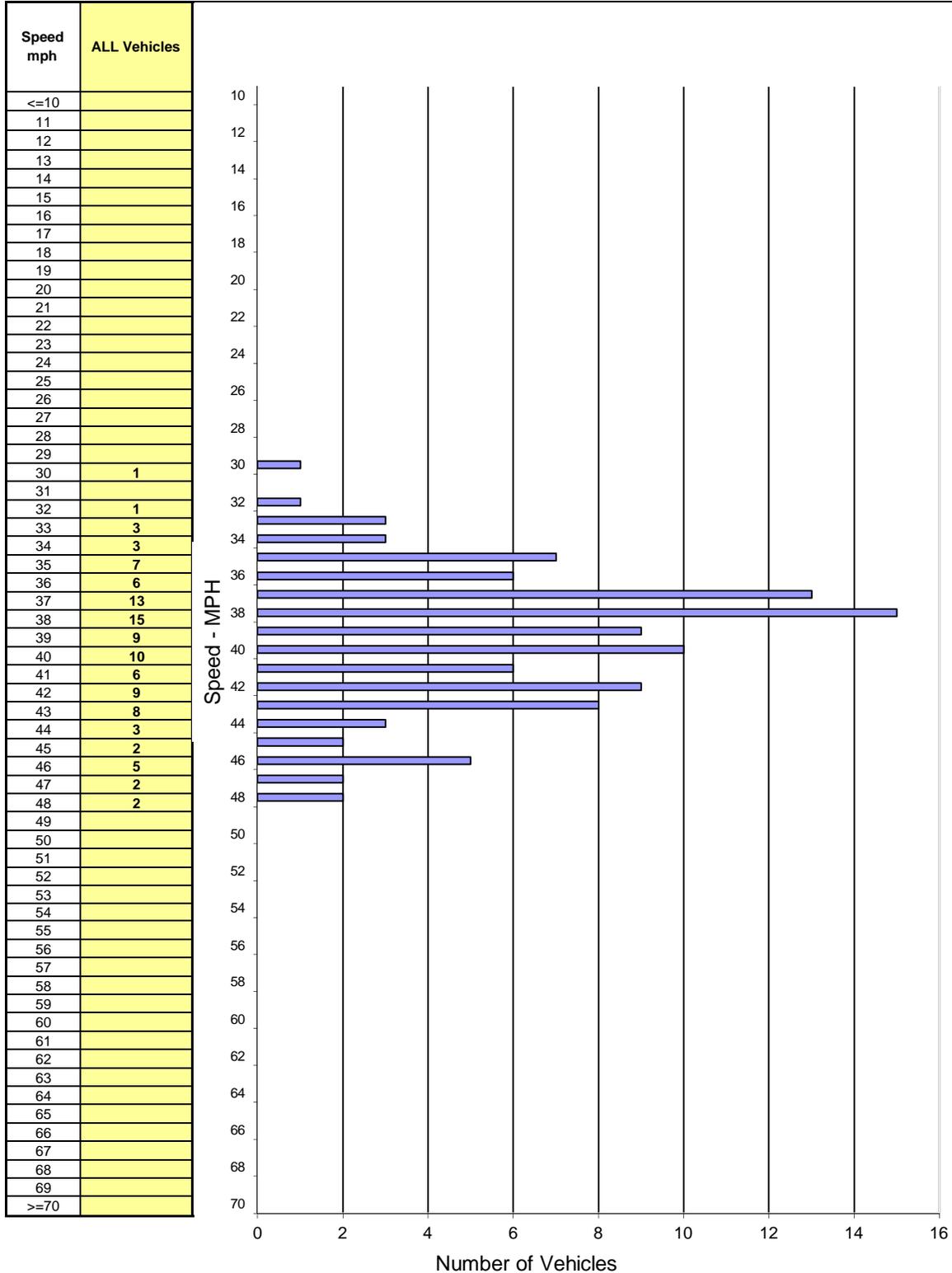
# Spot Speed Study

Prepared by: National Data & Surveying Services

## City of San Mateo

Survey Time: 9:45 - 10:20 Street Width: 36 Ft  
 DATE: 10/20/2015 Location: Alpine Road 350' North of Bishop Lane  
 DAY: Tuesday Posted Speed: 45 MPH Project #: 15-7796-001

### Southbound Spot Speeds



SPEED PARAMETERS									
Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
ALL	105	30 - 48	39 mph	43 mph	34 - 43	86	82%	4% / 5	14% / 14

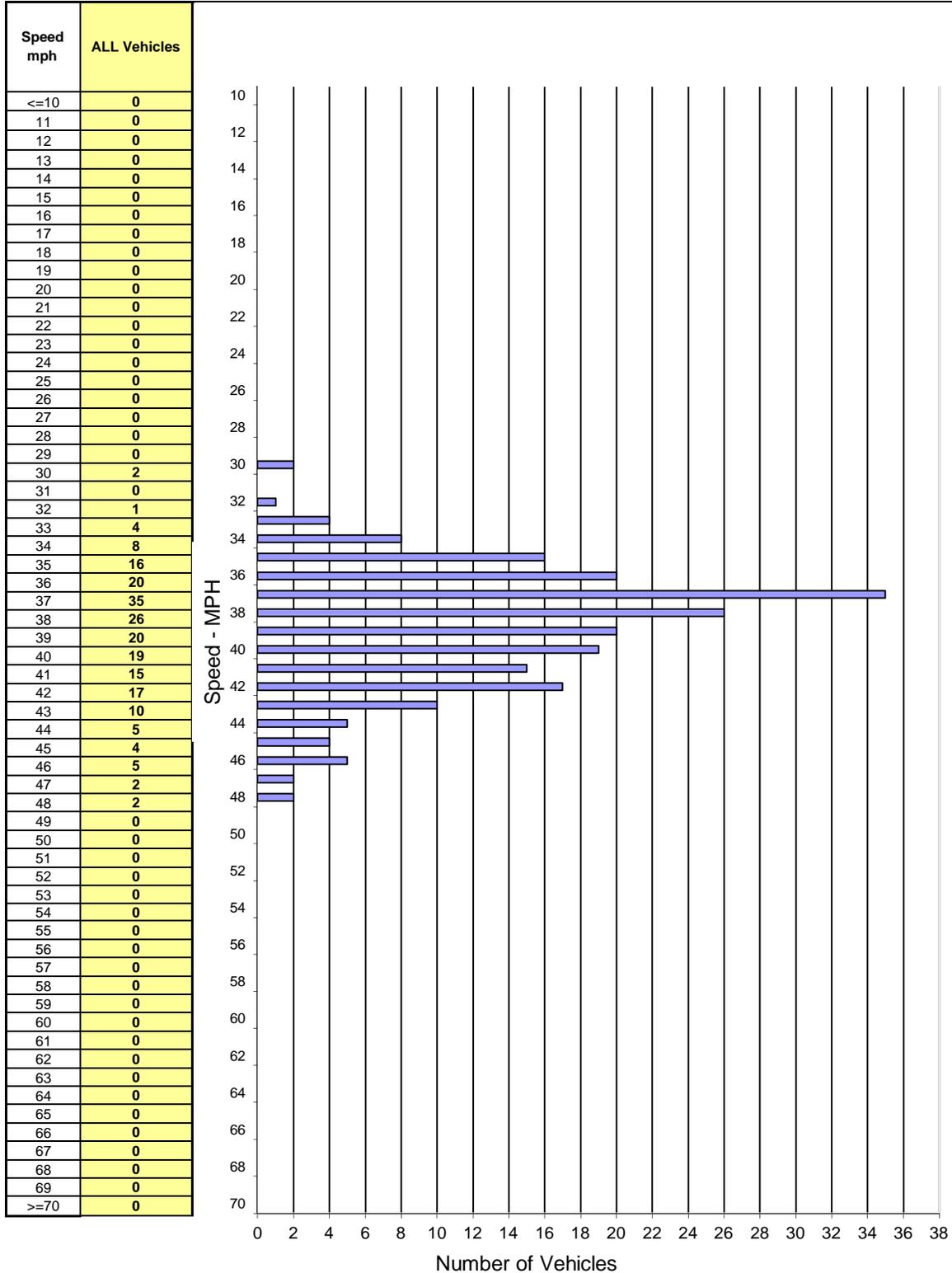
# Spot Speed Study

Prepared by: National Data & Surveying Services

## City of San Mateo

Survey Time: 9:45 - 10:20 Street Width: 36 Ft  
 DATE: 10/20/2015 Location: Alpine Road 350' North of Bishop Lane  
 DAY: Tuesday Posted Speed: 45 MPH Project #: 15-7796-001

### Northbound & Southbound Spot Speeds



SPEED PARAMETERS									
Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
ALL	211	30 -48	38 mph	42 mph	34 - 43	186	88%	3% / 7	9% / 18

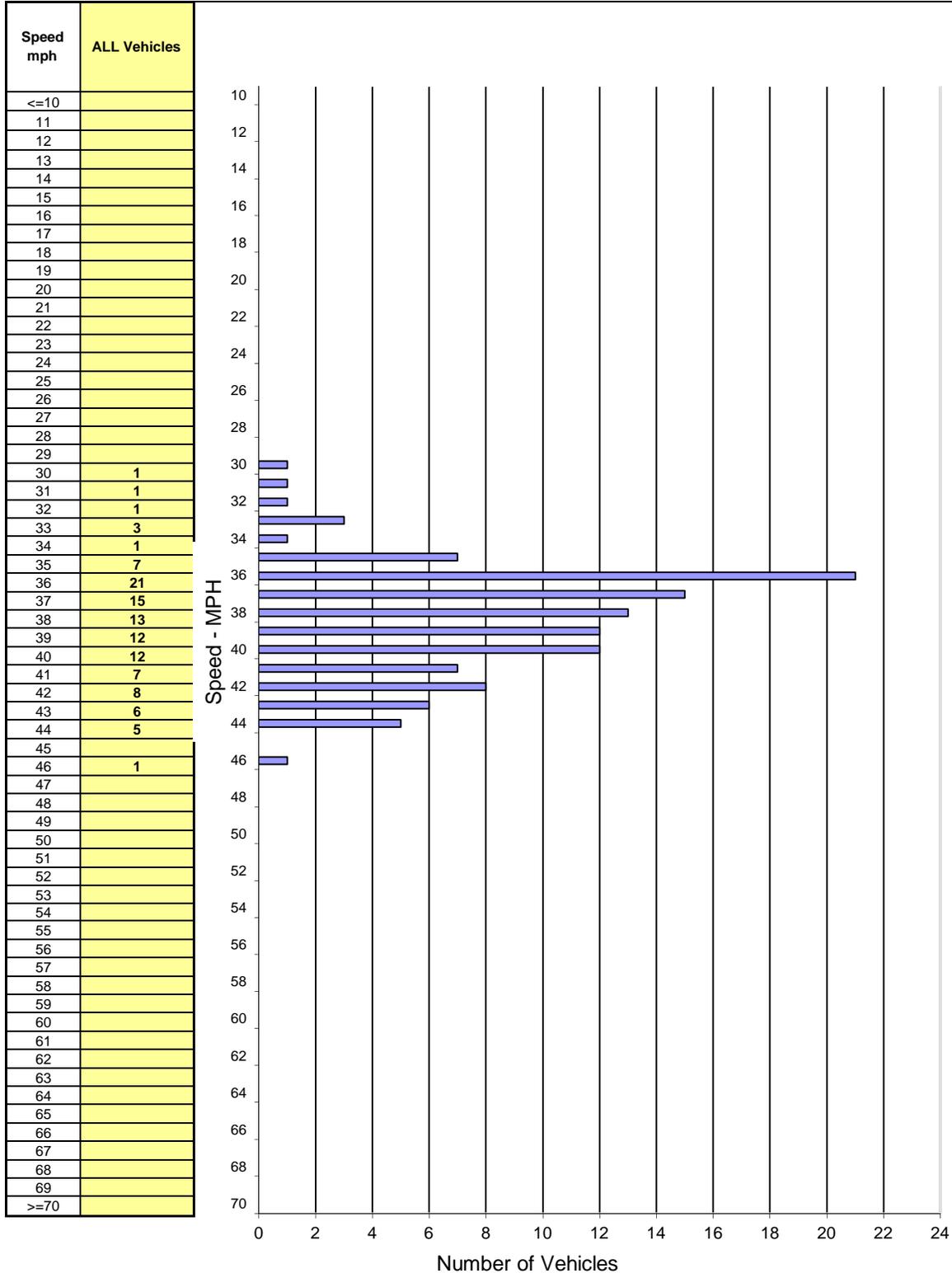
# Spot Speed Study

Prepared by: National Data & Surveying Services

## City of San Mateo

Survey Time: 10:45 - 11:30 Street Width: 45 Ft  
 DATE: 10/20/2015 Location: 2700 Alpine Road  
 DAY: Tuesday Posted Speed: 45 MPH Project #: 15-7796-002

### Northbound Spot Speeds



SPEED PARAMETERS									
Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
ALL	114	30 - 46	38 mph	42 mph	35 - 44	106	93%	6% / 7	1% / 1

# Spot Speed Study

Prepared by: National Data & Surveying Services

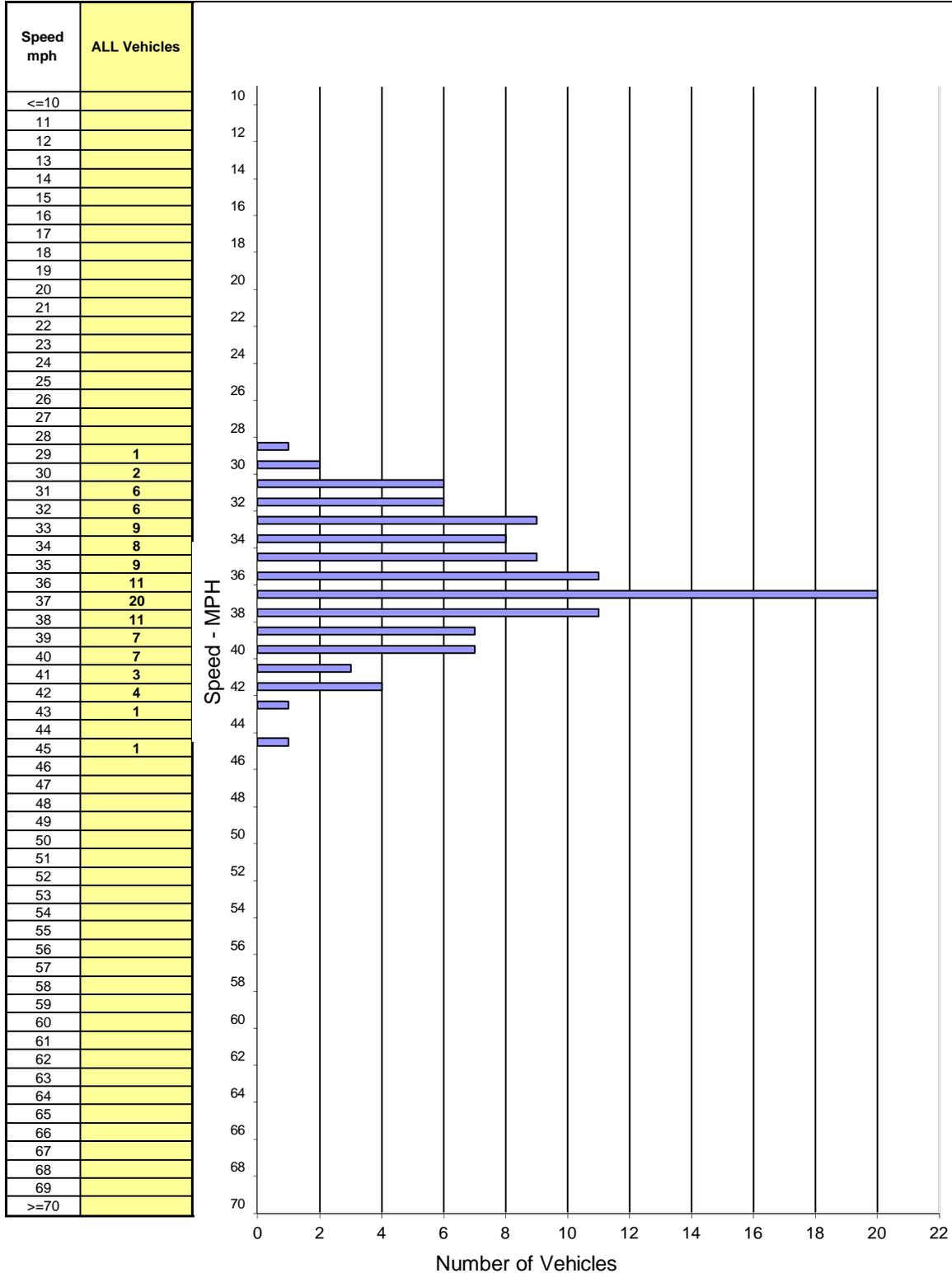
## City of San Mateo

Survey Time: 10:45 - 11:30  
 DATE: 10/20/2015  
 DAY: Tuesday

Street Width: 45 Ft  
 Location: 2700 Alpine Road  
 Posted Speed: 45 MPH

Project #: 15-7796-002

### Southbound Spot Speeds



SPEED PARAMETERS									
Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
ALL	106	29 - 45	37 mph	40 mph	31 - 40	94	89%	2% / 3	9% / 9

# Spot Speed Study

Prepared by: National Data & Surveying Services

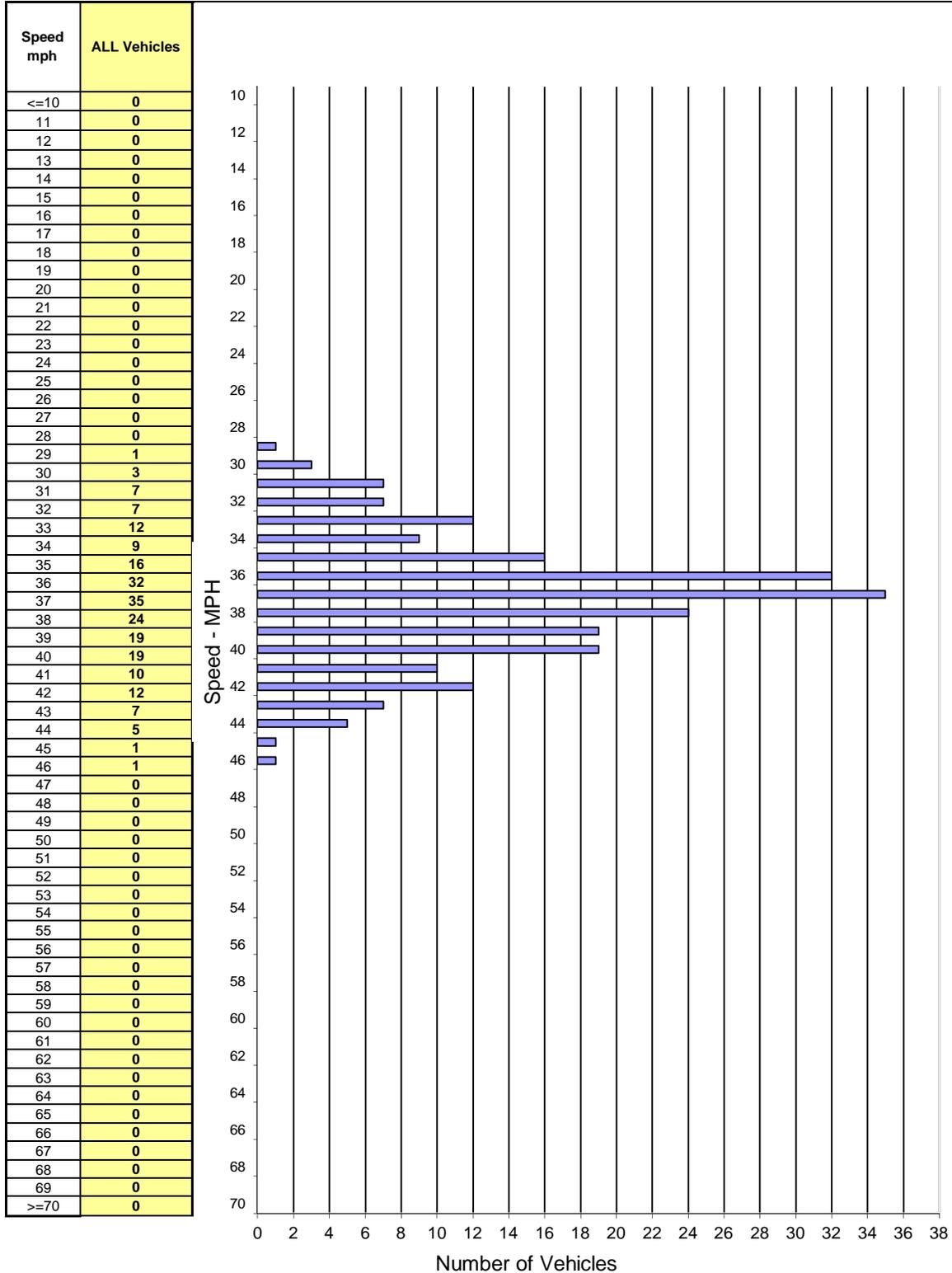
## City of San Mateo

Survey Time: 10:45 - 11:30  
 DATE: 10/20/2015  
 DAY: Tuesday

Street Width: 45 Ft  
 Location: 2700 Alpine Road  
 Posted Speed: 45 MPH

Project #: 15-7796-002

### Northbound & Southbound Spot Speeds



SPEED PARAMETERS									
Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
ALL	220	29 - 46	37 mph	41 mph	33 - 42	188	85%	8% / 18	7% / 14

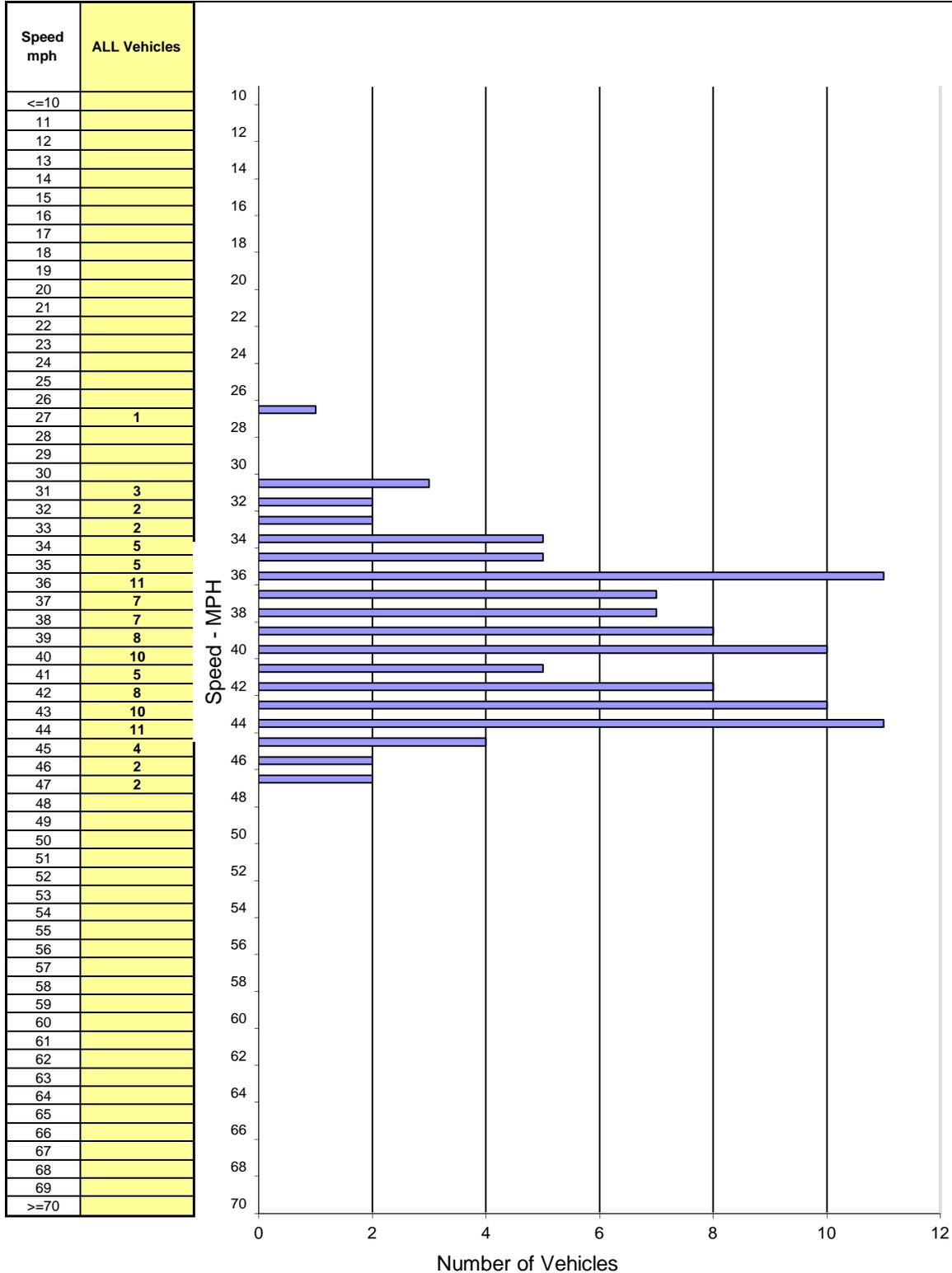
# Spot Speed Study

Prepared by: National Data & Surveying Services

## City of San Mateo

Survey Time: 11:50 - 12:35 Street Width: 52 Ft  
 DATE: 10/20/2015 Location: Alpine Road 100' North of San Francisquito Creek Road  
 DAY: Tuesday Posted Speed: 45 MPH Project #: 15-7796-003

### Northbound Spot Speeds



SPEED PARAMETERS									
Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
ALL	103	27 - 47	40 mph	44 mph	35 - 44	82	80%	12% / 13	8% / 8

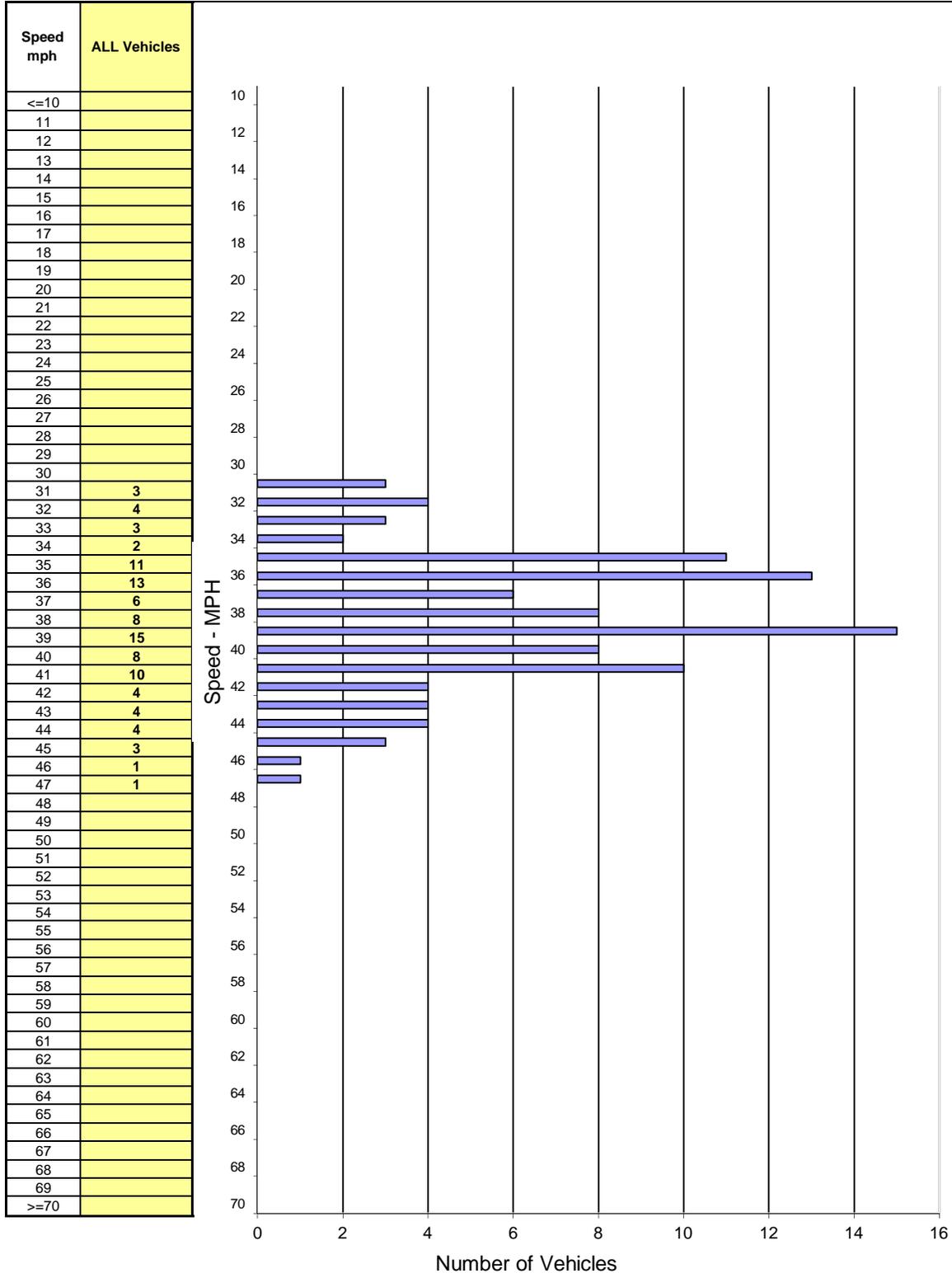
# Spot Speed Study

Prepared by: National Data & Surveying Services

## City of San Mateo

Survey Time: 11:50 - 12:35 Street Width: 52 Ft  
 DATE: 10/20/2015 Location: Alpine Road 100' North of San Francisquito Creek Road  
 DAY: Tuesday Posted Speed: 45 MPH Project #: 15-7796-003

### Southbound Spot Speeds



SPEED PARAMETERS									
Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
ALL	100	31 - 47	38 mph	42 mph	35 - 44	83	83%	12% / 12	5% / 5

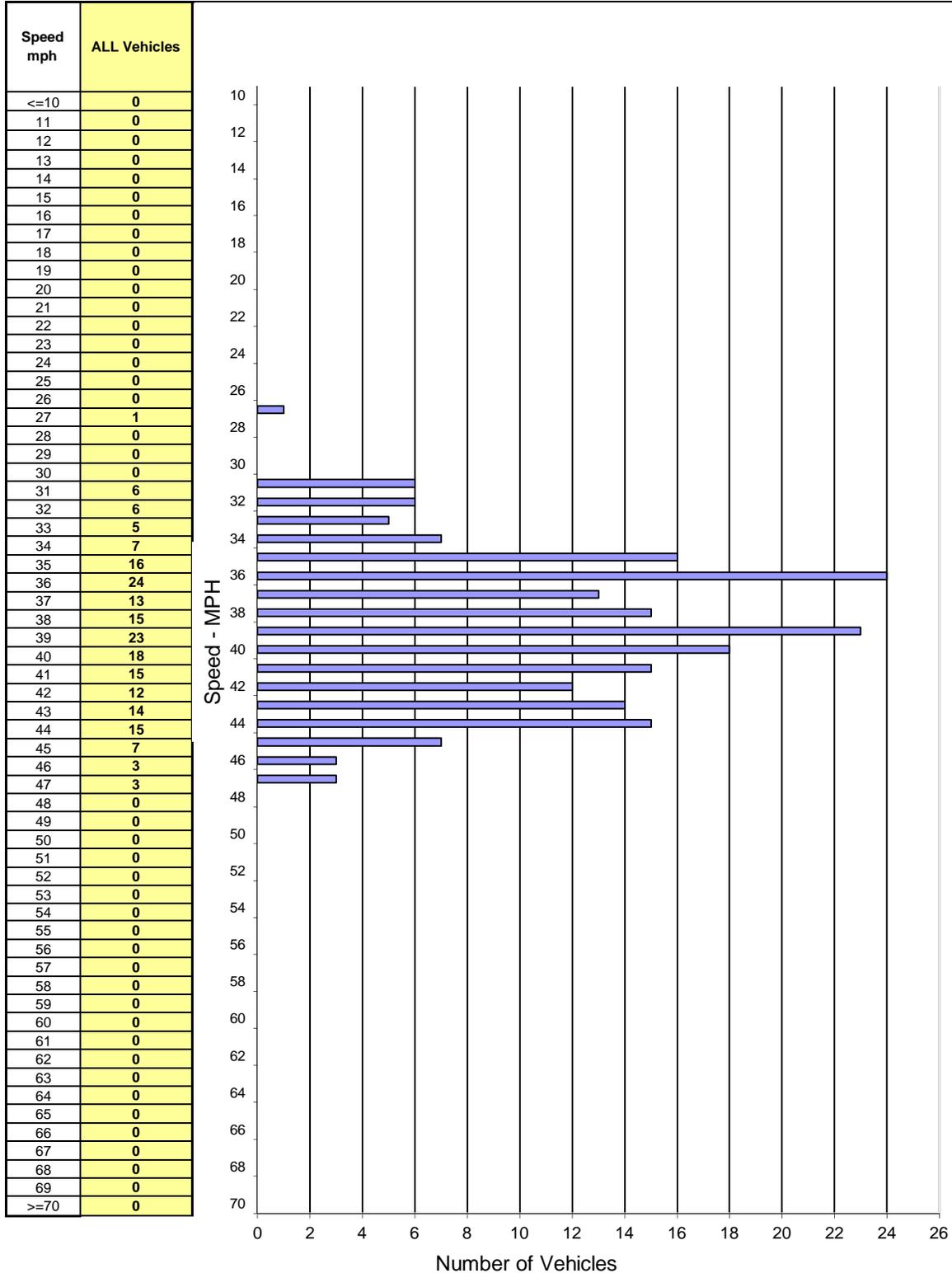
# Spot Speed Study

Prepared by: National Data & Surveying Services

## City of San Mateo

Survey Time: 11:50 - 12:35 Street Width: 52 Ft  
 DATE: 10/20/2015 Location: Alpine Road 100' North of San Francisquito Creek Road  
 DAY: Tuesday Posted Speed: 45 MPH Project #: 15-7796-003

### Northbound & Southbound Spot Speeds



SPEED PARAMETERS									
Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
ALL	203	27 - 47	39 mph	43 mph	35 - 44	165	81%	12% / 25	7% / 13

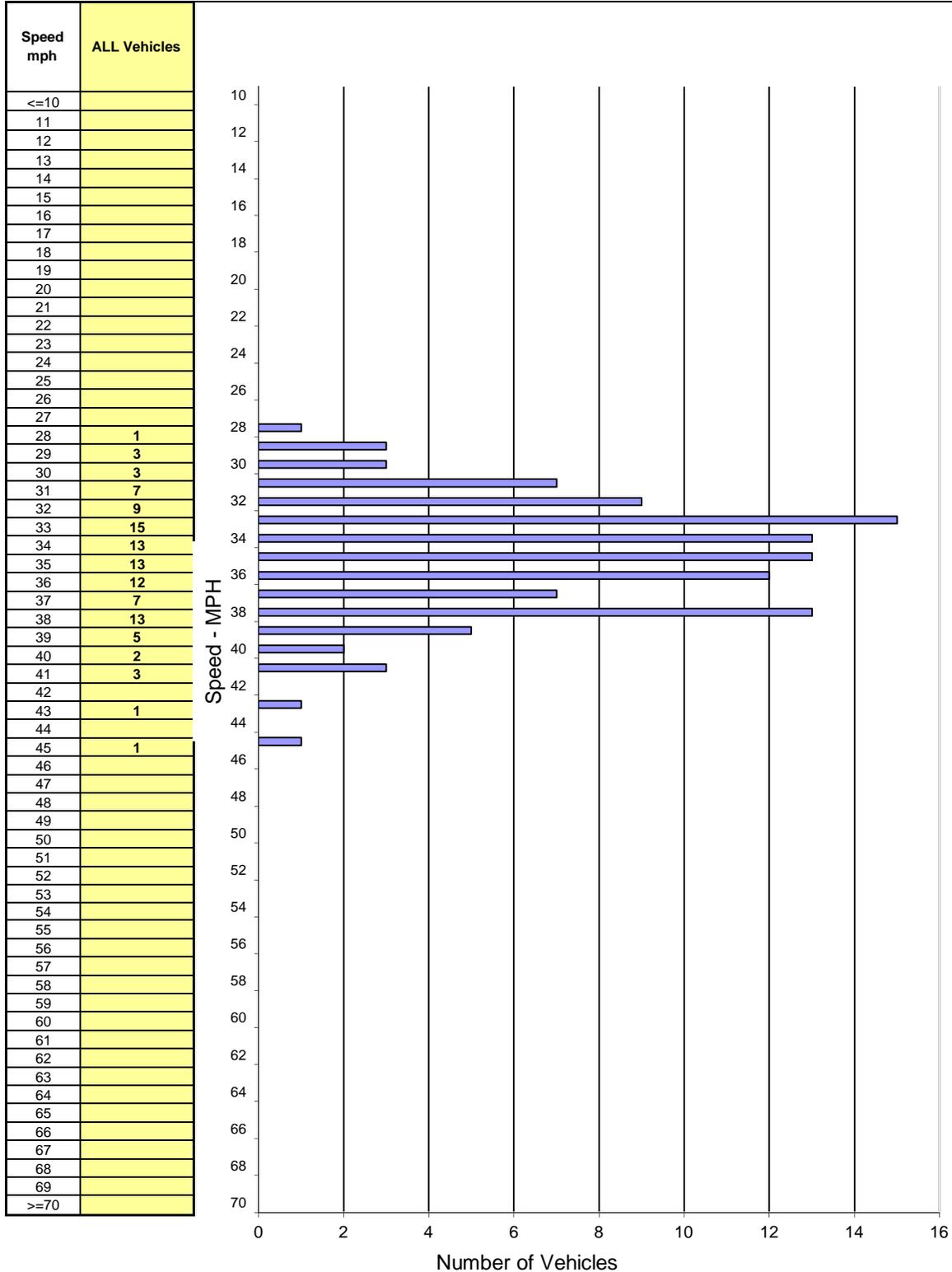
# Spot Speed Study

Prepared by: National Data & Surveying Services

## City of San Mateo

Survey Time: 12:55 - 13:40 Street Width: 45 Ft  
 DATE: 10/20/2015 Location: Alpine Road 200' South of La Mesa Drive  
 DAY: Tuesday Posted Speed: 35 MPH Project #: 15-7796-004

### Northbound Spot Speeds



SPEED PARAMETERS									
Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
ALL	108	28 - 45	35 mph	38 mph	30 - 39	97	90%	3% / 4	7% / 7

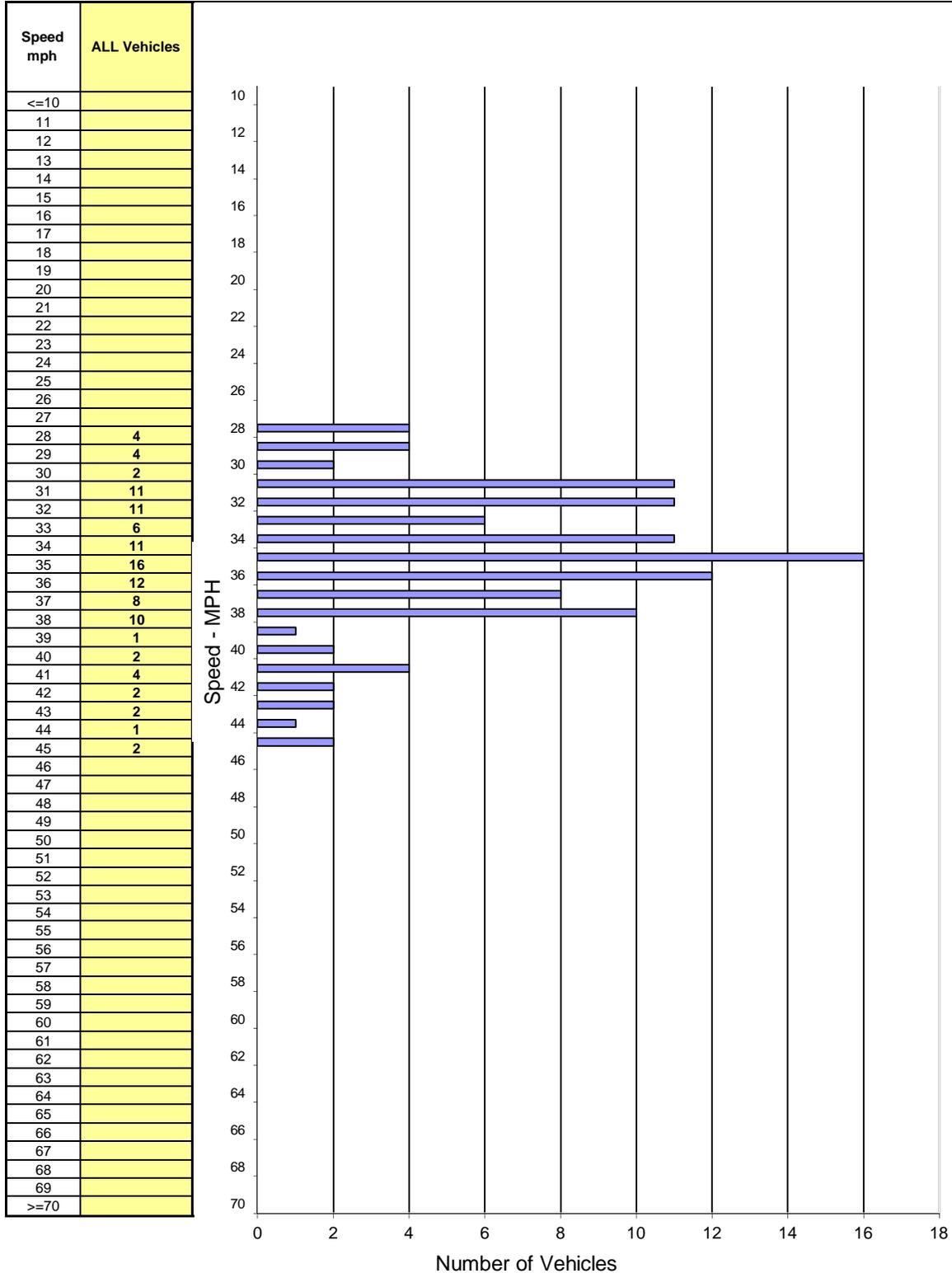
# Spot Speed Study

Prepared by: National Data & Surveying Services

## City of San Mateo

Survey Time: 12:55 - 13:40 Street Width: 45 Ft  
 DATE: 10/20/2015 Location: Alpine Road 200' South of La Mesa Drive  
 DAY: Tuesday Posted Speed: 35 MPH Project #: 15-7796-004

### Southbound Spot Speeds



SPEED PARAMETERS									
Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
ALL	109	28 - 45	35 mph	38 mph	29 - 38	91	83%	3% / 4	13% / 14

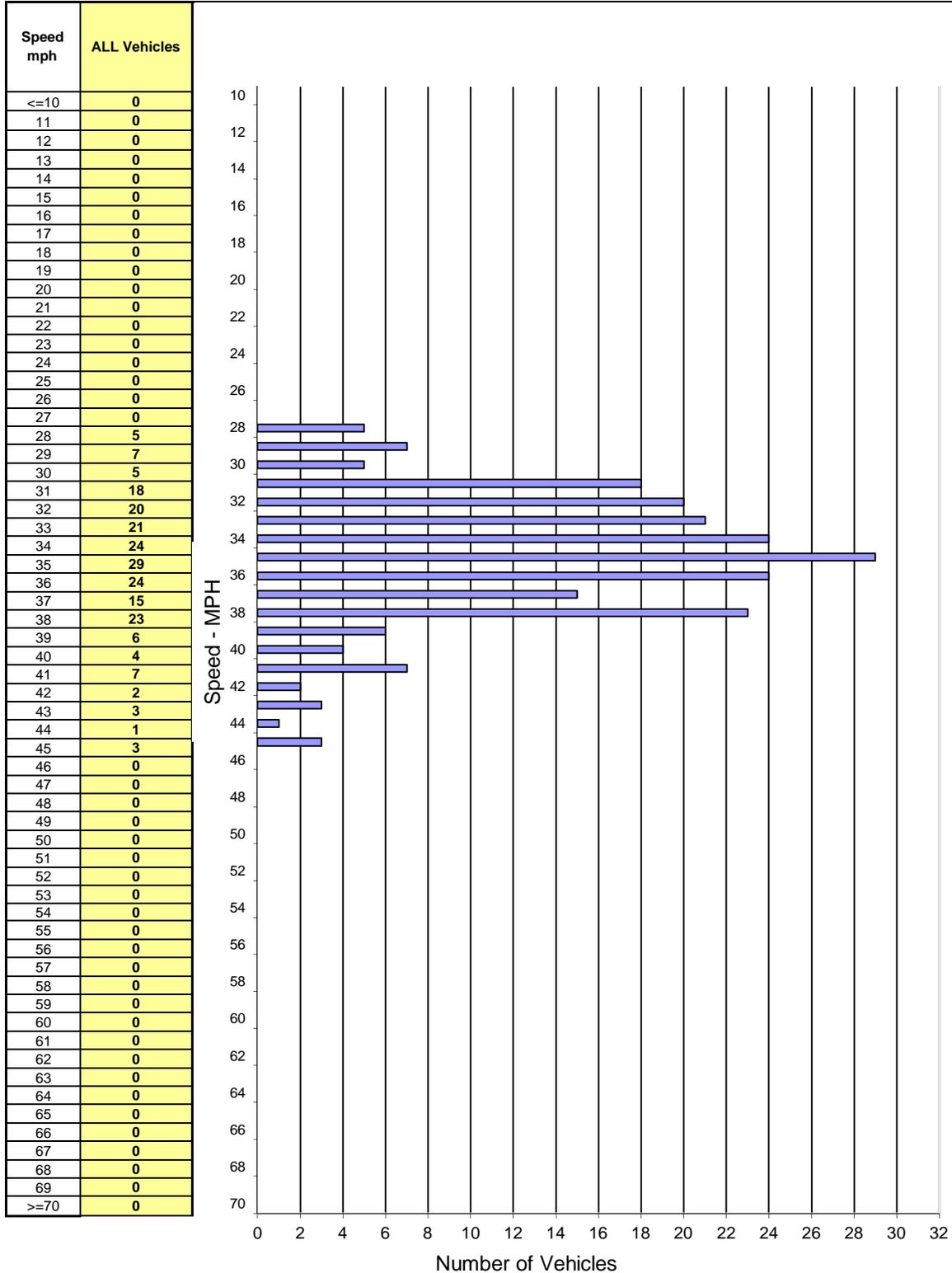
# Spot Speed Study

Prepared by: National Data & Surveying Services

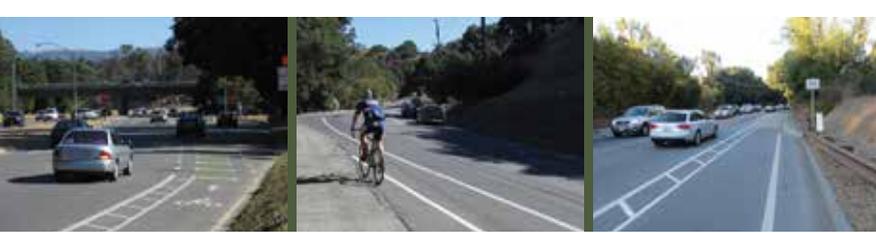
## City of San Mateo

Survey Time: 12:55 - 13:40 Street Width: 45 Ft  
 DATE: 10/20/2015 Location: Alpine Road 200' South of La Mesa Drive  
 DAY: Tuesday Posted Speed: 35 MPH Project #: 15-7796-004

### Northbound & Southbound Spot Speeds



SPEED PARAMETERS									
Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
ALL	217	28 - 45	35 mph	38 mph	29 - 38	186	86%	2% / 5	12% / 26



# Alpine Road

## CORRIDOR STUDY PROJECT

## Appendix B

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### Public Meeting Summaries and Survey Results

## **ALPINE ROAD CORRIDOR STUDY PROJECT MEETING**

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### **Summary of Community Meeting**

Thursday January 21, 2016

The San Mateo County Public Works Department hosted a community meeting on January 21, 2016, from 7:00-8:30 p.m. to discuss the Alpine Road Corridor Study Project. The meeting was held at the Woodland School, 360 La Cuesta Drive in Portola Valley. Over 100 community members attended the meeting.

County staff Joe Lococo, Deputy Director Road Services; Diana Shu, Road Operations Manager; and Hanieh Houshmandi, Associate Civil Engineer, attended the meeting. Adam Dankberg, Kimley-Horn Project Manager; Corbin Skerit and Alex Zabyszny, Kimley-Horn Traffic Engineers; and Eileen Goodwin, Apex Strategies Community Outreach lead, represented the project team. There were also two representatives from the California Highway Patrol (CHP) in attendance at the meeting: Matt Otterby and Captain Mike Maskarich, Area Commander. The CHP helped staff one of the stations and made a report out along with the project team members. Director of public works of Town of Portola Valley Howard Young and a member of the traffic committee of town of Portola Valley were also in attendance. Representatives from Calfire also attended the meeting.

This was the project team's first meeting with the community. The County held a meeting in February 2015 with the community, prior to selection of the consultant project team, to capture input for identifying the project need and to assist the development of the scope of the services for this project. The purpose of this community meeting was to get input and priorities from the community on corridor needs and concerns. Due to the limited right-of-way, trades offs will be necessary and this meeting's purpose was to learn from the community where their preferences were and where the issues and challenges are most prominent.

### **Meeting Summary**

The meeting started at 7:00 p.m. In addition to the personnel there to answer questions and present information, around seventy five (75) members of the public attended. Ninety percent (90%) of those in attendance at the start of the meeting indicated they received the mailed meeting notice. The County website was mentioned by one person. About 10% said an e-blast was how they found out about the meeting. Nextdoor was acknowledged as another way attendees found out about the meeting from 25% of the attendees. Ninety-five percent (95%) of the attendees indicated they were "neighbors" to the project area. Few of the attendees indicated they biked along the route. Twenty percent (20%) said they attended the community meeting in February 2015.

After a brief introduction by the County's Deputy Director Road Services, the Kimley Horn project manager spoke to a brief power point presentation. The presentation was given to orient the attendees to the purpose of the project,

some previous community feedback, project objectives, proposed evaluation criteria and the existing conditions.

To close the presentation, the Kimley Horn Project Manager presented the process and a schedule of next steps. During and after the presentation many questions, suggestions and opinions were offered to the staff and project team. The comments and responses offered during the meeting are captured below in the order they were given.

The meeting format also included forty (40) minutes of time for attendees to give additional input at four separate stations. That input has been captured in photos and text at the end of this meeting summary. One station asked for information about how and when the attendees use Alpine Road in the study area and included a map that enabled attendees to indicate where they lived. A second station included a dot exercise to rank priorities for the corridor including safety, traffic flow, bicycle and pedestrian movements. Another station had a map of the area and comments, suggestions and issues were posted by attendees using sticky notes. A final station included an exercise to give feedback on some potential solutions for the corridor including photo examples of various improvements.

At the very end of the meeting, the facilitator convened the attendees and each station lead reported out on the themes that were coming through from the feedback at the individual stations.

This meeting summary also includes a transcript of the meeting comment cards that were handed in at the meeting. They are listed at the end of the table below:

<b>Comment/Question</b>	<b>Response</b>
Where on the website will the PowerPoint be posted?	In the Public Work's Department section.
Will there also be an email contact we can use for communication?	Yes, Hanieh Houshmandi, Associate Civil Engineer is the County Project Manager and can be reached at <a href="mailto:hhoushmandi@smcgov.org">hhoushmandi@smcgov.org</a>
Can there be an on-line survey as well?	Yes, a survey has been setup on-line at <a href="https://www.surveymonkey.com/r/alpinecomments">https://www.surveymonkey.com/r/alpinecomments</a>
Is there a Stanford University Representative at this meeting tonight?	They were invited. (No one indicated they were representing Stanford when the audience was asked)
What does "west" mean?	West is the direction toward Ladera.

<b>Comment/Question</b>	<b>Response</b>
Is 36 bicycles an hour a lot?	Yes, during a weekday peak hour for this type of road it is.
How is bike data captured? Do the 100's of bikers at a time get counted?	We have a person go out to the site and make live counts. The large groups would only be counted if they were seen.
Can the speed signage be changed to white and enforceable—it is only yellow/advisory now? We want the CHP to be able to write tickets. This needs to be enforceable.	That can be looked at.
Traffic congestion has gone up significantly in the last three years. Getting around is a log jam. When is your data from?	Traffic counts were collected in October 2016. Some comparison was made to 2011 counts and we found moderate increases in some cases. We can bring this information to our next meeting in May.
Do you coordinate with Palo Alto?	We are looking at the traffic patterns in the context of the whole area. This team has also done work at Page Mill and 280 and is familiar with the issues. There is no formal meeting with the City of Palo Alto as part of this effort, this is a County of San Mateo process and jurisdiction.
I walk to the Stanford Dish area five days a week using the pedestrian path, at the end of the current path there is a barrier which ends in an unsafe manner and juts out into the roadway. I have almost been hit by cars in this location and typically am an arm's length from the cars. Maintenance is also an issue as the weeds have been allowed to grow up which also causes the pedestrians to have to get closer to cars. There is poison oak out on the path. The area between Bishop and Piers needs attention.	Thank you we can look into these issues.

Comment/Question	Response
How is this project being coordinated with the proposed creek repairs? PG&E repairs? It's a mess.	County Public Works staff is aware and coordinating on all of these projects. We are looking for compatibility between the projects.
Cars that park for the Dish also push pedestrians into the roadway. The signs are inconsistent.	Thank you. We can look into these issues.
If the County does redo the pedestrian path and it keeps it level with the roadway and there is no barrier, then cars will continue to use it as a "shoulder" and drive on it during the rush hour peak periods. Add a guardrail.	Comment noted.

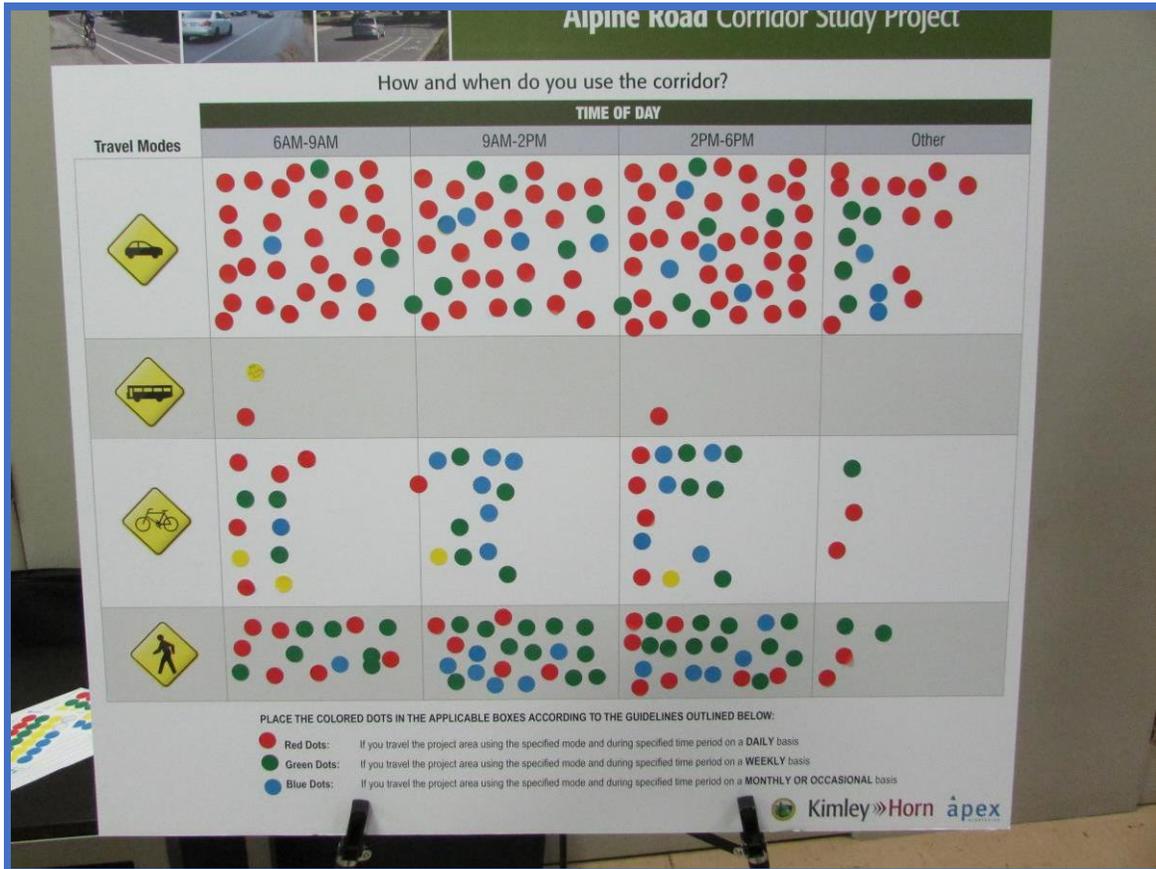
<b>Station Report Out</b>
<b>Station #1: Characteristics</b>
<p>Good representation tonight from Ladera and Stanford Weekend Acres.</p> <p>Many attendees indicated they are commuters and use Alpine Road every day. No bus usage. There are more pedestrian users than the team would have expected.</p> <p>The people here tonight indicated they bike as recreational users not commuters (a community member wondered if there would be more bike commuters if it was safer).</p>
<b>Station #2: Priorities</b>
<p>Attendees want to prioritize improving side street access to Alpine Road, pedestrian improvements and access, and slow down speeders.</p> <p>Although not categories on the board, other priorities include: easy access, future transit accessibility and % of trucks</p>

<b>Station #3: Corridor Information and Needs</b>
Lots of improvements were suggested, there are many sticky notes to catalogue. A number of comments were provided regarding modifying or not modifying the intersections of Alpine Road with La Mesa and La Cuesta. There is concern for fixing sight distance issues. There were a lot of suggestions in the freeway interchange area, including looking at a roundabout. Access to side streets was also identified as issues to be addressed.
<b>Station #3b CHP Report:</b>
Attendees expressed frustration with the amount and frequency of enforcement on speeding. However, CHP wrote 211 tickets in 2015 in this project area and gave another 26 warnings. Parking is also a frustration. Perhaps the community should consider advocating for a tow away zone to increase the penalty for illegal parking near the Stanford Dish Trail access.
<b>Station 4: Types of Improvements</b>
The roundabouts and traffic signals were either loved or hated there was little in between opinion expressed at this station. There is a desire for providing Class 1 bike path facilities. Active feedback message signs are popular with the attendees as a possible deterrent to speeding.
<b>Comment Cards</b>
I think this is too brief for residents to review and respond to complex issues. Responding to images of improvements rather than site specific plans means little.
Stanford is a major contributor to the problem. They need to be involved. Example: Stagger shift hours at Stanford Hospital.

## Board/Station Summaries

### How & When Do You Use Alpine Rd

- Overwhelming majority use Alpine throughout all periods and drive
- Second most common was pedestrians
- Third most common was bicyclists
- Very few attendees used transit as transit service is limited



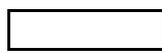
### Where Do You Live

- Ladera – 37
- Portola Valley – 4
- Stanford Weekend Acres – 25



### Priorities

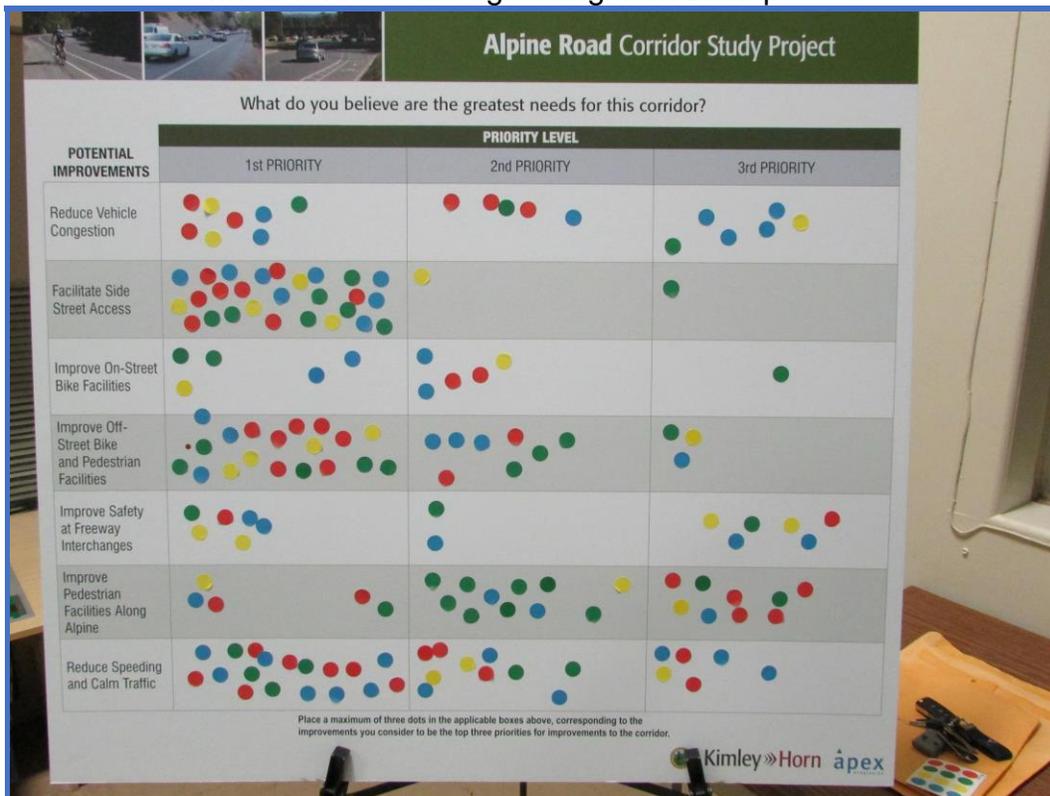
Potential Improvements	1st	2nd	3rd
Reduce Vehicle Congestion	9	12	19
Facilitate Side Street Access	31	2	3
Improve On-Street Bike Facilities	7	12	3
Improve Off-Street Bike and Pedestrian	20	19	9
Improve Safety at Freeway Interchanges	7	5	19
Improve Pedestrian Facilities Along Alpine	6	26	28
Reduce Speeding and Calm Traffic	20	24	19

 Lowest 1st, 2nd, or 3rd Priority

 Highest 1st, 2nd, or 3rd Priority

- The three largest clusters of concern were facilitating side-street access, improving pedestrian/bike facilities (mainly off of Alpine), and reduce speeding and calm traffic
- Emergency vehicle access should be considered on such a tight corridor
- Access to and from the trail should be considered as there is not

- adequate sidewalks or bike paths (on many extents) otherwise
- Pedestrian safety is a major concern with the narrow roadway
- Speeding is a major problem especially for side-street egress (sight distance and gap concerns)
- Alpine being a “truck route” is a concern for one resident
- Consider future transit use along Alpine Road
- Many residents did not like the idea of signals
- Narrow on-street bike lanes, especially near hilly topography is a major concern, vehicles often veer into bike lanes
  - Particularly noted at Bishop Lane, vehicles veer into the bike lanes when vehicles are egressing from Bishop



### Corridor Constraints and Needs

- La Mesa / La Cuesta
  - Left turns out are extremely hazardous.
  - Pedestrian crosswalk lighting is inadequate.
  - Woodland pickup/drop-off periods causes backups and is dangerous for school buses making lefts.
  - Vehicular conditions (as above) degrades bike/pedestrian safety. Better facilities for those users are needed.
  - Many support roundabouts or stop lights for traffic control here, about 10% oppose them.
  - Speeding is a constant issue
  - Many comments on the Shell station traffic circulation and vehicular compliance to signage there.

- I-280 SB Off-Ramps
  - Better warning (flashing yellow) of approaching stop sign is needed.
- I-280 NB Off-Ramps
  - Numerous comments on the low rate of stop sign compliance here for bikes and vehicles.
  - Many support roundabouts or traffic signal
  - Some note that recent improvements at stop sign (larger signage, roadway dots) has significantly reduced stop sign violations and improved safety
- Piers Lane/Alpine Access Road
  - Numerous comments on the parking issue at Piers Ln due to the Dish.
  - Comments on speeding.
  - Comments on bikes and peds being separate from both each other and the roadway here.
- Bishop Lane
  - Access from Bishop Lane is difficult during the peak hours.
- Wildwood Lane / Stowe Lane
  - Access issues going into and out of Stowe and Wildwood.
  - Only moderate support for traffic signal or roundabouts.
  - Several comments on pedestrian facility improvements needed here.
- Junipero Serra & Sand Hill Road
  - Two comments on the poor signal synchronization.
  - Crosswalks are needed here.
  - Emergency vehicle access along the mainline should be considered.
  - Trucks should not be allowed on Alpine when they have Sand Hill.
  - Stanford should be part of the larger project dialogue here.

East of I-280



West of I-280



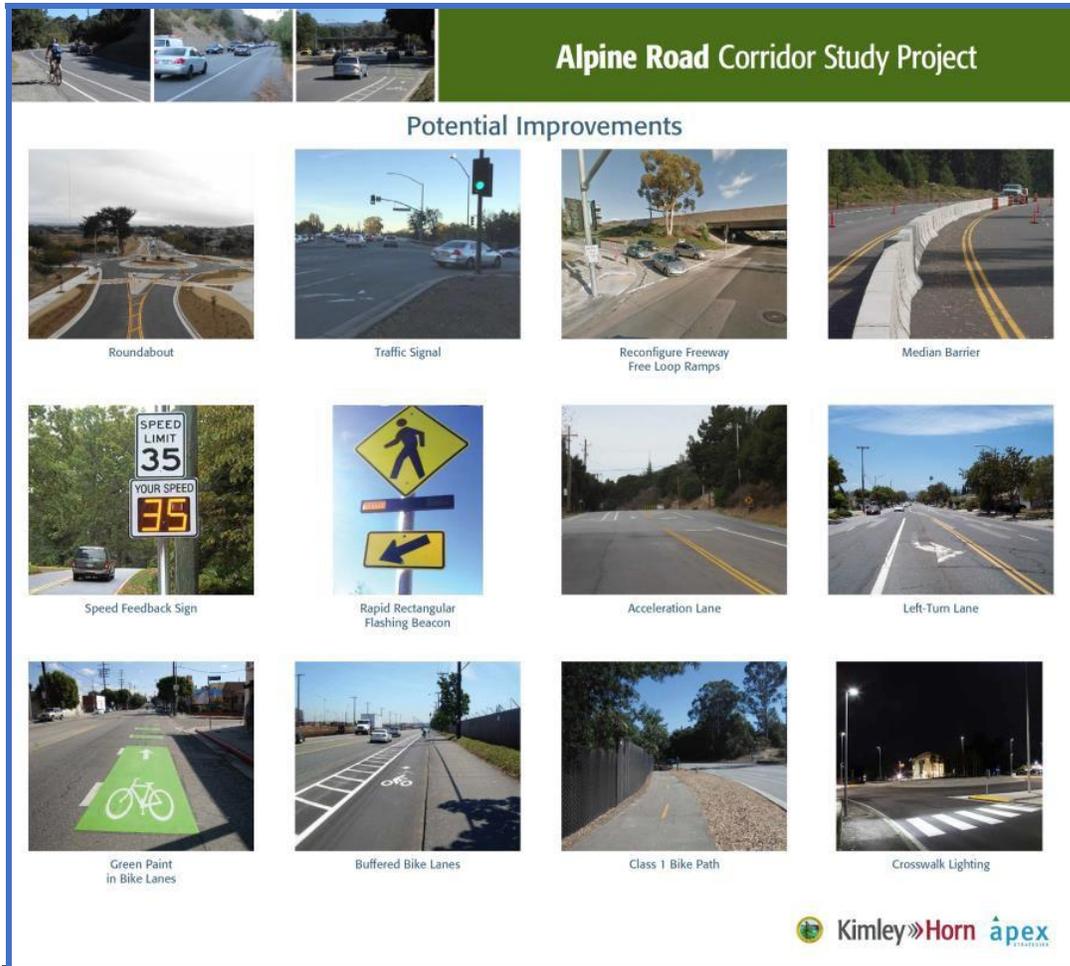
### *Desirable Improvements Survey Board*

The paper surveys were compiled and generalized comments for each improvement type are below:

- **Roundabout** – Opinions were split roughly 50/50 on supporting roundabouts on Alpine Road
  - In-Support: they generally wanted them at Piers Lane, La Cuesta Drive, La Mesa Drive, and at the I-280 interchange ramps. Attendees mentioned the need for them to accommodate larger vehicles, like trucks and buses, and their primary means of supporting it is they believe it would slow down traffic and provide safer intersection access.
  - Opposed: they generally believed that they simply would not work for the driving behavior types that use the corridor.
  - A few members of the public expressed a concern that a roundabout would not provide frequent enough gaps of sufficient length in the traffic stream for them to turn into and out of the side streets.
- **Traffic Signal** – Opinions were split roughly 75/25 on support/opposed to signals.
  - In-Support: they saw them being good fits at La Cuesta Drive, La Mesa Drive and I-280. They believe that it would provide safer intersection access, particularly at I-280, and would provide breaks in traffic.
  - Opposed: they saw them as being useless and not a good fit for the “rural” characteristic of the corridor. They specifically did not want signals at Bishop Lane.
- **Reconfiguration of Freeway Loop Ramps** – Opinions were moderately in support, while a majority of attendees did not understand exactly how it would help corridor operations.
  - Once the improvement was described, the opinions split between individuals who liked the potential safety benefits and those who felt that it would add more delay to their travel times.
- **Median Barrier** – Most people were opposed to this assuming that the barrier would create more accidents and head-on collisions. The one attendee in support thought it would work for the winding portion of Alpine Road.
  - Some individuals thought that it was “ugly.”
- **Speed Feedback Sign** – Opinions were generally split 90/10 for/against.
  - In support: they believe they’ve needed it for years at multiple locations along the corridor, especially at La Mesa Drive in Ladera and Stanford Weekend Acres.
  - Opposed: they believe that they’re not needed and will be useless.
  - Two individuals asked if there was a quantifiable benefit associated with Speed Feedback Signs and what would be the specific characteristics of locations where these signs would be the most beneficial.
- **RRFB** – Opinions were split 20/80 for/against.
  - In support: they believe anything is better than the status

quo for pedestrian safety and is needed at La Mesa Drive and La Cuesta Drive.

- Opposed: they do not want flashing lights and think they are useless.
- Several people asked about operation of RRFBs.
- **Acceleration Lane** – Opinions generally in support of as they believed they'd help for side street access, particularly at La Cuesta Drive, La Mesa Drive, and Piers Lane.
  - One individual said that he uses acceleration lanes and has little trouble accessing Alpine Road from the side street. He expressed frustration that so many people do not know how to use acceleration lanes causing unnecessary delays to themselves and others.
- **Left-Turn Lane** – Unanimous support, particularly for side-street access.
  - There were few questions about this improvement.
- **Green Paint Bike Lanes** – Essentially unanimous support. One attendee indicated that they are not good enough for school-aged children, however.
  - There were few questions about this improvement.
- **Buffered Bike Lanes** – Unanimous support with the caveat that there is room for them.
  - There were few questions about this improvement.
- **Class I Bike Path** – All agreed except two attendees. Most people saw this as being better for school-aged children and strollers. They emphasized the need to have them maintained as well. The two in disagreement thought they were low priority and that they could be dangerous because of side-street access.
  - Several members of the public were concerned with pedestrian safety in relation to fast moving bicyclists. They felt a bike path may exacerbate the situation.
- **Crosswalk Lighting** – Opinions were split 50/50.
  - In Support – Thought they would be good at La Cuesta Drive and La Mesa Drive to slow down motorists.
  - Opposed – Thought they were not sufficient improvements and that it may still feel too unsafe to cross at night. Two attendees simply wanted full signals for crossing. One attendee only supported in-pavement lighting.
  - Several people associated this improvement with in-pavement lights.



**Alpine Road Corridor Study Project**

**Potential Improvements**

 Roundabout	 Traffic Signal	 Reconfigure Freeway Free Loop Ramps	 Median Barrier
 Speed Feedback Sign	 Rapid Rectangular Flashing Beacon	 Acceleration Lane	 Left-Turn Lane
 Green Paint in Bike Lanes	 Buffered Bike Lanes	 Class 1 Bike Path	 Crosswalk Lighting

Kimley»Horn apex

## SurveyMonkey & E-mailed Input

### *SurveyMonkey Responses*

- Most respondents replied within one week after the meeting and there were a total of 146 responses received.
- In the PM peak period 91 percent drove the corridor. 27 percent biked on the corridor, at least occasionally, and 24 percent walked on the corridor, at least occasionally. On a daily basis in the PM peak, 73 percent said they drove, three percent took transit, three percent walked, and 2 percent biked.
- Common themes from the responses are summarized below:
  - Access to the multi-use trail should be more apparent and the trail should be maintained
  - Overflow parking at the Dish is a major issue for users of the corridor; parking laws need to be strictly enforced or parking eliminated
  - The all-way stop control at the I-280 ramps allows cyclists to feel safer given the slower vehicular speeds, installing a signal would cause increased vehicular speeds

- I-280 ramps should also be “squared up” to allow better sight distances between cyclists and motorists
  - A few respondents indicated support for a roundabout solution
- A variety of opinions were provided on how to make the I-280 intersections safer, but consensus is that it could be improved for stop sign compliance and sight distances between cyclists and motorists
- It is difficult to find gaps to turn from La Cuesta/La Mesa Drive intersections for all modes of travel
  - A school bus stop at La Cuesta Drive introduces children as pedestrians at this intersection
- Getting into/out of side-street stop-controlled intersections (e.g., Piers Lane and Stowe Lane) is difficult, especially for left turns
- There is too much signage entering Ladera and at the shopping center, causing driver confusion
- Stanford should be contacted and brought into the discussion along with Santa Clara County, Menlo Park, and Palo Alto.
  - Sandhill Road and Page Mill Road are both over-capacity.
- There is congestion at the Junipero Serra Boulevard intersection in the morning and going towards I-280 in the evening.
- Widening of Alpine Road would be desirable, especially along the eastern extents of the corridor
- Lack of crosswalks preclude a bus stop location on Alpine Road especially near Stanford Weekend Acres

- Emergency vehicle access, oversized construction trucks, and horse trailers/farm equipment should be considered given the congestion.

*E-mail Responses (items beyond those already noted above)*

- Number of accidents shown were vastly under the amount of actual accidents occurring along the corridor.
- Speed limit along Alpine Rd is too high and there are inconsistencies in the speed limits along the corridor.
  - Lower the speed limit to a consistent 30 MPH
- Corridor is over-capacity.
- There is a constant problem of cars colliding with the Bishop Lane guard rail.
- The turn radius for the WBL turn at Alpine Road / Junipero Serra Boulevard is too short and trucks often off-track into the brick median and encroach into the conflicting lanes
- More law enforcement presence is needed along the corridor
- Ramp metering at the freeway interchange should be considered
- Inter-jurisdictional coordination is needed for this project as well as coordination with other stakeholders (e.g., Caltrans, Stanford, etc).
- The number of cyclists using Alpine Road at all times should be considered, not just during the peak hours. There are often “pelotons” involving 50-100 cyclists.
- There should be greater consideration for the “Dish” back entrance.
- U-turns at Buck Estate and Stowe Lane are a constant problem.
- It is dangerous for cyclists making a southbound left turn at Alpine Rd and Junipero Serra given the middle shared southbound through-left turn lane.
- Motorcycles often use bike lane
- Vehicles crossing double yellow centerline to overtake buses and trucks
- The trail along Alpine Rd may not be ADA compliant and is often filled with debris. Flooding may also be a problem on some extents such as the portion under the cantilevered section.
- Cyclists use the path at high speeds
- Need for traffic signals to be able to turn out of Bishop Lane and Stowe Lane
- The left-turn from Junipero Serra Boulevard to Alpine Road is dangerous for cyclists and pedestrians given the lack of ped/bike facilities at the intersection
- Traffic light actuation needs to be checked at Junipero Serra Boulevard & Alpine Road
- The newly installed fence by the new golf green at the corner of Alpine Road /Junipero Serra Boulevard blocks the line of sight for cyclists and eliminates the prior existing safety zone for pedestrians and cyclists.
- Red curb paint could be used as a solution for truck access at Wildwood Lane

- Many accidents appear to occur at the southern end of the corridor where the visibility is poor
- Pedestrian surface crossing at Junipero Serra Boulevard is needed
- There is an urgent need for illuminated pedestrian signs and blinking lights in the crosswalk on the road at La Mesa and La Cuesta Drives.
- When riding a bike west from Junipero Serra to Ladera the bike path going west feels very narrow especially by the big curve just before reaching the back entrance to SLAC. Cars tend to hug the curve and the bike lane is narrow. Small rocks often fall downhill into the bike lane so bike riders cannot hug the hill.

## Photos from Meeting







## Alpine Road Corridor Study

### Community Meeting #1 – SurveyMonkey Comments Received

The turn off to the Bike Trail that goes by the Stanford Golf Course is tricky just before when going East - it would be nice to have it start just before 280 and go behind Stanford Weekend Acres - need to work with Stanford. The parking is messy at the foot of the dish - might be better to make a car park the other side of the Bridge - again ask Stanford to do this.

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Alpine Road works pretty well for me as a cyclist, but I would like to see the striping at Alpine Access Road changed so that the bike lane is not to the right of a right-turn-only lane. A buffered bike lane would be nice, but I doubt there is enough pavement width.

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Written from a perspective of a cyclist 1) The stop signs at RT 280 are critical in maintaining the relative “safety” of this interchange. Since everyone is required to stop, this slows down motor vehicle speeds such that the merging and mixing between cyclists and motorists is not too intimidating. With a stop light instead of a stop sign, the motorists will be slowed to a cyclist pace about half of the time. An early concept proposed a stop-light – that proposal would undo nearly all of the safety improvements (\$0.5M) from the recently installed buffered bike lanes. 2) The bike lanes, especially between the bridge over the creek and the Menlo Park limit could benefit from being wider – the roadway is curvy and motorists aren't particularly good about staying in their lane. 3) All on-street parking needs to be eliminated. For instance, I've seen the “dish” parking lot overfill and the hikers will park in the bike lane; even where it is buffered (buffered parking?). This requires cyclists to try and take the motor vehicle lane. Not all cyclists, especially novice riders will take the lane and consequently, they will ride next to the parked cars; aka “the door-zone”, which is extremely hazardous 4) Also, when the dish parking lot overfills, motorists will park on the “Alpine trail” and block those walkers and cyclists who use the paved trail. Better parking is required or, the existing restrictions on parking need to be strictly enforced. 5) The intersection of two (of the three) freeway on-ramps with Alpine could be improved by “squaring-off” the corners to reduce motor vehicle speeds. The two are the NB ramp of RT 280 from “south or west” bound Alpine and the SB ramp of RT 280 from “north or east” bound Alpine. In particular, I find the SB RT280 potentially hazardous enough that I actually move left into the motor vehicle lane to discourage motorists from passing me and cutting onto the entrance of SB 280. This is likely to be an expensive retro-fit.

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I would like to see the multi-use trail restored and enhanced. I grew up in Ladera and became a young bike rider using that multi-use path. I rode to middle school in Sharon Heights and wouldn't have done that using on-street bike lanes even with the much lower traffic volumes in the 1970s. Creating family-friendly bike routes is just as important as having good on-street facilities for commute cyclists.

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Slowing down traffic is the greatest concern. Our house on the corner of Alpine Road and Stowe Lane. Cars are often moving at very high speeds, well over 50mph. Alpine Road is used as an expressway. There are no stop signs or stop lights to regulate speed and speeding down Alpine road is dangerous. Simple example: About 9 months ago a semi truck came barreling down from 280 heading westbound on Alpine Road. The driver was forced to slam the brakes and left skid marks longer than 80 feet. The sound was terrifying. This kind of recklessness occurs daily. Stop lights or stop signs should be strategically placed on Alpine Road to help control traffic. Another major concern is the lack of a structured walkway along Alpine Road on the side exiting the Stanford golf course near (unmarked) Rural Lane and heading toward Wildwood Lane. There is no structured walkway and that imposes a dangerous threat to pedestrians. Alpine Road is a dangerous street with high speeding incidents AND extreme heavy traffic conditions. I am hitting upon the safety issues resulting in traffic moving at expressway speeds, but there is also the extreme flip side to it that there are heavy traffic hours during the week at the beginning and end of each work day. Alpine Road needs to be addressed and updated (new walkways, sidewalks, and road improvements) to provide SAFE conditions for pedestrians, bicyclists and motorists. When semi trucks use the street as an expressway for high speed access, that only adds greater concern to the already unsafe conditions of automobiles traveling at uncontrollable speeds. I could go out to Alpine Road at any time during the day and 8 to 9 cars out of 10 will be moving at speeds well beyond the speed limit. It really is ridiculous and unacceptable. I travel on this road everyday and have lived in this neighborhood for over 20 years. For the very FIRST time I saw a motorcycle officer sitting on the road with a laser detector. I was amazed at how the traffic was moving respectably. His presence for that moment made a tremendous difference.

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1. Getting onto Alpine Road in a car from La Cuesta and La Mesa is dangerous. The cars come really fast, and there is no mechanism that slows them down at those intersections. We drive it daily and it makes us nervous on a regular basis. I would love to see a stoplight at one or both of those intersections -- I think it would save lives. 2. Crossing Alpine Road on foot from La Mesa and La Cuesta is dangerous. Traffic is too fast. It feels like a tragic accident waiting to happen. 3. Would love to see a safe bike path for families and pedestrians along Alpine Road from the Ladera area to Stanford. Right now it is unsafe and unsuitable for kids or families -- it would be a wonderful addition to do this well and connect PV to the trail system that starts close to Junipero Serra.

---

Traffic backs up in both directions during my commute. It's particularly bad in the mornings at the intersection of Alpine/Junipero Serra/Sand Hill. I know that many people who don't live in Portola Valley use Alpine as a way to and from 280, since Sand Hill backs up so badly. This will only get worse with the expansion of Stanford Hospital. My concern with making the Alpine Rd corridor "more efficient" is that it will draw even more cars to this rural area, defeating the purpose of any improvements. I hope that better timing of lights, plus public transportation or a parking lot near 280 and Sand Hill with a bus that ferries people to Stanford, could mitigate some of the problem. Obviously the bike / walking path needs to be shored up in some places so it doesn't fall into the creek.

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There is no safe way for bikes to travel between west of 280 and the rest-of-the-world!! So for all the bike trails and "legal" bike lanes currently present in Portola Valley, Woodside, and Los Altos Hills, there is NO WAY to connect to all the Menlo Park, Stanford, Palo Alto, and Mountain View bike trails and "legal" bike lanes! This is a crazy barrier for non-hard core cyclists to have to cross -- at the risk of mayhem or death with every bike trip!! We are a LONG WAY from being a role model with our utter lack of any kind of comprehensive transportation solution!

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Safe bike path

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1. Eastbound merge from 3 into 1-lane: 2-lanes of Alpine Road reducing to 1 lane along with traffic from the 280N exit. 2. Alpine Road (East and Westbound) from PV town-line (i.e., LaMesa to where Alpine changes from 1 lane to 2 lanes (or 2 lanes to 1 lane): Ladera Shopping Center creates congestion on Alpine Road because of the center lane is almost never properly used for turns. 3. Merge from the Ladera corridor (both streets and the shopping center) onto the single eastbound Alpine Lane. 4. The shoulder parking on the north side of Alpine Road in the vicinity of the Alpine Road 3-to-1 lane merge is an ongoing hazard during morning commute times all year and evening commute in the 'spring/summer.' This area that is approximately across from SLAC entrance, is used to access open space area north of Alpine Road.

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Intersection of la Cuesta and alpine is tough to cross in the mornings at commute times. Also cross walk could use more visibility - perhaps flashing lights to get across the road.

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My largest concern is safety....both when driving and when walking. The speed on Alpine road is too fast. When it's not plugged up trying to get out onto Alpine from Stowe is the most dangerous part of my day. The second most dangerous is when I come home and hoping cars will slow down behind me so I can turn into Stowe. And then there's walking with my dog...a daily occurrence and again sometimes a frightening event. The multi-use path should NOT be used by road bikers, they have a bike lane. Speeding bikers on the path is dangerous. But....you know this all. We've been to meeting upon meeting upon meeting and we've said the same thing for years. We posted on maps, listed our priority concerns and talked and talked and talked. The only difference now is the county is spending a huge amount of money to do this all again. I hate to be negative....but this is all for naught. I asked what the budget was for the fix...and was told there's some but we need to look for grants. If that's the case we're talking years and years before anything gets done. For there not to have been representatives from Stanford or surrounding areas...well, without them partaking nothing is going to get fixed. I feel this is a waste of time.

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Crosswalks in/around Ladera with lights. Current crosswalks are very far removed from being adequate. The community association has advocated for lighted crosswalks repeatedly but has thus far been met with opposition from the County for a variety of reasons which do not seem to make sense. Second would be better traffic control north of highway 280 (some people call this "east").

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The road is extremely congested between 280 and Sand Hill Road. The timing of the lights at the Sand Hill/Junipero Serra/Alpine intersection seems poorly planned, and cars trying to turn right onto San Hill frequently back up the intersection. The cross walks at La Mesa and Alpine are dangerous - traffic on Alpine rarely stops or even slows.

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1. La Mesa entrance off Alpine Road by Shell station is very dangerous. I've witnessed several times cars trying to get to the Shell station from Alpine road that turn into the wrong side of La Mesa and don't realize there is an island separating the two sides of the street. Better signage needed. 2. Very difficult to make a left turn out of Ladera onto Alpine road during typical commute hours. Some solution for controlling traffic here is sorely needed. 3. Paved walking path along Alpine between Ladera and Stanford could be improved. Several areas where its unpaved. Other areas, where either on bike with kids or walking / running requires being on the edge of the road because the paved trail is not available.

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I have three big concerns: 1) the traffic is grid-locked every morning and late afternoon around the commute 2) cars continue to run the stop sign heading away from Stanford just before the 280 overpass. the significant steps taken to date to mitigate do not appear to have been successful. 3) biking on this corridor feels extremely unsafe and I try to do it as infrequently as I can. this is a shame given it's the key access point to Stanford, Palo Alto and Menlo Park and I'd love to bike there more often (vs. driving).

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We need a solution to alleviate traffic congestion both directions (east and west) on Alpine Road. We also need a proper pedestrian/bike pathway along Alpine Road. Lastly, we need a safer way to cross Alpine Road at both La Cuesta and La Mesa for pedestrians.

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1st priority: speed control by the Ladera Shopper and lighted/blinking crosswalks at La Cuesta and La Mesa to allow safer exits and street crossing from Ladera to the path 2nd priority: widening and improvement of a safe bike and pedestrian path between Ladera Oaks all the way down to Stowe Lane.

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I am retired. Consequently, I do not have a rigorous schedule for using the corridor. My use of the Alpine Road Corridor is daily, but at somewhat random times throughout the day, evening or night. The biggest problem I have is getting out of Stowe Lane onto Alpine weekday mornings between shortly after 7:00 AM and about 10:00 AM. Because of the traffic, access is only available when some north-bound motorist on Alpine stops to let me enter or cross Alpine. I seriously doubt that there is anything, other than the economy crashing, that will actually "fix" that situation. The only suggestion I have is that there be "leave clear" signs posted (and painted on the Alpine roadway, as in front of a fire station), so at least there is access to Alpine when the north-bound traffic is stopped by the traffic light at Junipero Serra Blvd. Re: bicycling on Alpine: I was once an avid bicyclist, but no longer ride. The scariest place on the Alpine Road Corridor was fixed when the bridge over San Franciscito Creek (between Piers Landing and I-280) was widened (perhaps 20 years ago?). The remaining most dangerous place is at the intersection with I-280. The current road markings are perhaps the best that can be done as long as both bicycles and automotive traffic occupy the road. Absent moving bicyclist off of the roadway somehow (building some sort of alternative route?), the current marked bike lanes seems the best that can be expected (as long as bicyclists respect the bike lane markings, and do not ride in the automobile traffic lanes).

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Piers Lane and Alpine Rd is a hazard. Very difficult to get into traffic from Piers at most times. Need stop light at this intersection. Many Big Dish walkers and SLAC works using this intersection and high speed Alpine Rd drivers will not yield. Living here, I have had one actual collision and many near misses.

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We would like to see the off road bike trail expanded and improved. Migrate the many bikers from the road to the off road bike trails. Regarding Ladera intersections onto Alpine Road, PLEASE no stop lights. Consider other non-intrusive forms of traffic control, ie, lighted crosswalk, etc. for pedestrians. Also, consider lowering the speed limit along Alpine Road west of 280. The creek bank erosion along the path near Webb Ranch needs to be fortified/protected. The major traffic back up east of 280 during rush hour needs to be alleviated/improved.

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The obvious improvement would be to make the bike/pedestrian access and crossing of the freeway more friendly. The current design is highly unintuitive to bikers/pedestrians/drivers alike. I have seen tons of accidents and skittish bikers move through that 280 overpass section. The bike and pedestrian lanes and sidewalks are also absolutely terrifying especially on the east side between the 280 and Sand Hill. Roadside parking for the dish trail adds additional confusion, traffic and merging which is especially hairy for cyclists moving through that section. The latest redesign under 280 is a complete cluster. The repainting of the bike lanes to green and the white arrows actually distract drivers from the stop signs such that I have seen multiple accidents where drivers have thought the green lanes were additional car lanes intended to ease merging onto the freeway onramp lanes. I have witnessed 3 car accidents in the last year where drivers turning left on to the 280 North entrance have been hit by other cars running the stop side heading west by mistake -- confused by the green lanes and blinded by cars in the center and left turn lanes heading West. Then add cyclists and you've got a recipe for real disasters. I would advocate for dedicated bike/pedestrian bridges that allow improved access to the places people are headed -- Stanford Campus, Stanford Shopping Center, Sand Hill Road, Schools in Menlo Park. Can we offer a pedestrian/bike bridge and dedicated walk/bike paths that might cut across or around the perimeters of Dish Trail, SLAC, Stanford golf course? As it currently stands, the design is completely off limits to my children by bike or foot from a safety perspective. It is also the most treacherous part of my own bike commute to Mountain View and I'm sure limits the appetites of most other bike/walk commuters who likely opt to just drive instead.

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the intersection of alpine road and la queda (in ladera)

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- From 280 South's Alpine Road Exit east: Improve the flow of traffic. Many drivers are going west, then making dangerous U turns on Alpine Road. - Alpine Road east from 280 to Juniper Sero light: WIDEN the road. The bottleneck could easily be addressed if the road were widened to 2 lanes, rather than reduced to 1 and widened. - BIKE LANE ADDED: This is critical!!!! How many bikers need to be harmed or die because of the lack of safe passage? More cars are on Alpine because parents like me refuse to put our children at risk on this dangerous road. We need to improve the signage and clean up the 280 under pass - then provide safe passage at the 4 way stop.... and then continue to provide bikers with ample room after the entrance to the Stanford Dish.

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I believe enforcing the reduced speed limit of 35 mph on Alpine as you approach Ladera from 280 would provide considerable safety and decongestion benefits. As it is now, drivers continue to drive 40-45 mph south on Alpine Road even after the posted 35mph limit sign just before the La Cuesta intersection. The higher speeds on Alpine make it difficult to turn onto Alpine from Ladera and make pedestrian crossings of Alpine more challenging.

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Traffic light at the intersection of La Cuesta (ladera shopping center) and Alpine would be helpful. Cars are going faster than 35 mph which makes crossing the road dangerous.

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1. Safety in crossing from La Cuesta/La Mesa by car and by foot. 2. We absolutely need a bike/pedestrian path that continues from Ladera to Sand Hill Road. Far too many kids are risking their lives biking along the dangerous street. I also often see moms pushing their strollers along this busy section of Alpine and can't help but think that there is nothing between them and speeding cars that far too often are distracted by their cell phones. We absolutely need a safer option!

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The stretch of the road between Junipero Serra and the stop sign at 280. So badly congested, both ways.

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The most obvious safety risk on the corridor is the lack of a dedicated biking/walking/running path from the 280 Junction to Sand Hill Road. The second biggest safety risk is traffic exceeding the speed limit from the 280 Junction on Alpine Road to Portola Road.

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1. Bicycle and pedestrian safety. The corridor is dangerous for adult cyclists and unacceptable for children on bikes. Especially the section from the Ladera Shell station to Stanford Weekend Acres. The bike path is crumbling and disappears completely by Webb Ranch and the guardrail section. The location of the guardrail forces bike traffic into the road. The best solution is a dedicated bike path adjacent to Alpine Road. Like the one that exists on the lower section of Alpine Road by Junipero Serra, and the upper section of Alpine Road by Westridge. A dedicated bike path would greatly enhance the appeal of Alpine Road and encourage more bike traffic and ideally less car traffic. Similar projects in other cities (such as Tahoe City along the West Shore) have turned a dangerous car corridor into a scenic and pleasant multi-use cycling, running, and walking corridor. 2. Traffic congestion during morning and evening rush hours. Sand Hill Road should be encouraged for travel to Stanford and Menlo Park to alleviate "drive through" traffic from 280 to Sand Hill Road on Alpine.

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The entire area between I-280 and Junipero Serra. The information provided at the meeting was wildly inaccurate. I have already submitted a list of about 40 items that need addressing and have repeatedly sent suggestions/photos of accidents etc. and nothing has been done about any of the existing problems. The universally accepted opinion is that the speed limit should be NO MORE THAN 35 MPH and trucks should be restricted as to size and cargo. I do not think that the consultant hired has clue one what the problems are or how to address them. This survey is also totally inadequate.

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We are family of three. One of us bike daily to work (Stanford), one of us take public transit to go to Woodside High School, and one of us drive to work. We need a pedestrian cross walk on Alpine at Stanford Weekend Acres so the students coming from Woodside or M-A can have their southbound bus stop back. They are at least a dozen students from Stanford Weekend Acres who take public busses to school and there is not a bus stop on Alpine on the way back from school because the lack of a safe crosswalk.

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Getting off Southbound 280 onto Alpine is difficult. The green paint for bikes is very helpful. However, one has to twist one's head almost more than 90 degrees to look left for oncoming traffic or bikes. I was rear-ended there last summer when I started to move ahead and then had to stop when I saw that it really wasn't safe yet to proceed.

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Greatest need is the Alpine Rd 280 intersection. No one stops anymore. I grew up here and there was never a problem before. Entering Alpine from La Mesa is very challenging in the mornings. Speeding is a problem from Ladera into Portola Valley. Driving the speed limit gets drivers on your tail, dangerously close.

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1. The traffic light sequence at Alpine and Junipero Sierra needs improvement. Lots of idling traffic in the Alpine Rd West bound lanes that could proceed when the Alpine Road East lane has a green light. 2. Too many clue-less drivers at Alpine/280 that have no concept of 3-way stops. 3. Turns left out of La Mesa (Ladera) onto Alpine during Woodland School pick/drop times are backed up; Woodland School should pay for a Police Officer to direct traffic during those hours to keep things moving.

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Turning left from Wildwood Ln in the morning takes a very long time, since there is an uninterrupted flow of cars coming from 280. The bus stop on Alpine Rd (serving high school students from MAHS and WSHS) has been eliminated since there is no way for the students to safely cross Alpine Rd.

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Slow the traffic down , reduce the volume of traffic and put in lights between 280 and sand hill on alpine so people can get out of the streets. It's almost impossible to get on alpine in the morning because of traffic.

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Bike riding feels unsafe, especially westbound where cars drive fast and the width of the bike lane is variable. We are completely against more traffic lights on Alpine. Roundabouts for the 280 interchange might be better for the hour in the morning and afternoon when there is more traffic (5 days a week), but the other 160+ hours per week a stop sign is fine.

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Slow down traffic in front of all of Ladera for safety and so that cars can safely pull out and pedestrians can cross.

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It seems much of the traffic heading on Alpine west off of 280 could be alleviated by fixing the Page Mill exit (off 280) back up. Many folks go up Alpine to Arastradero to Page Mill to avoid the Page Mill exit - sometimes I do, too. The Page Mill exit is unsafe as there is always stopped traffic on the freeway with vehicles buzzing by at high speeds - always a worry for me when I'm one of those sitting ducks. Seems if we could identify non-necessary Alpine traffic (i.e. people using it for re-routing) and identify the root causes of those re-routes, perhaps we won't need any structural changes like lights, roundabouts, stop signs, etc.

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Between La Mesa and Alpine and La Cuesta and Alpine, often at the intersection between 280 and Alpine.

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You need to decrease the amount of Stanford traffic especially employees by any means. If this means Stanford providing another access road from the Alpine/280 interchange across their lands feeding into the intersection by their driving range or whatever Also increase availability of public transit to the Stanford Hospital and shopping center. Also to downtown Menlo Park.

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1. Parking at Piers Rd Stanford University Dish has difficult entry given street parking, bicycles and traffic approaching from both directions around curves but especially from West. 2. Bicycle traffic between Foothill and Dish has little room, areas with irregular pavement, varying width bikelane with guardrails that appear around corners.

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280 to weekend acres in weekdays during commute hours

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La Mesa at Alpine. Long backup each morning. Also long backup at Alpine at Junipero Serra.

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Continue to witness people running the stop sign at Alpine and 280 along with running stop sign heading west on Alpine.

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sorry, I can't think of any

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Roundabouts at La Cuesta and La Mesa and the 280 and Alpine intersection would dramatically improve traffic flow. If you have ever driven in Britain it is obvious how well these work. In fact I think UK traffic would be at grid lock without them. If we are unable to produce an efficient public transportation system then we must make the best use of the present roads. As traffic slows whilst approaching a roundabout this would make it much safer for pedestrians. A brightly painted crossing would also attract drivers attention.

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- Roundabouts or lights at the 280 intersection, La Cuesta, and La Mesa would be wonderful. - The Lower Alpine Trail surface needs to be fixed. Currently it is pitted and dangerous. - The Lower Alpine Trail crossing the I280N offramp is patently dangerous. Many cars turning right towards Stanford are oblivious to the crosswalk there. - One idea that I haven't heard discussed before would be to extend the Stanford Marguerite shuttle to the clinics on Alpine Road. That would give us additional transportation options.

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The signs at the Shell station make it very difficult to pull out either left or right because they create a barrier to visibility.

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At the bottom of La Cuesta at the Alpine intersection Cars regularly enter the do no enter entrance to the Shell gas station. This is very dangerous because they are going into a one way directly against downhill traffic. This danger is made worse due to a kids school bus stop which is picked up at approx 7:40am daily. With the worse circumstance that a driver veers off the road into a group of children to avoid a head on collision. Personally I have seen at least 100 cars due this. Some by mistake others bcasue they didn't want to go up the right way and turn into the gas station. One of my children is at this bus stop everyweekday. I will be notifying the school district that this is an unsafe place for a bus stop due to this danger. If a study with cameras is done once should be placed here to view the number of occurrences.

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Narrow sections by Stanford Weekend acres Much of the path that has not be cared for... Sections disappearing into creek. Riding a bike in the motley herb side of Alpine Road is a death wish!!

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The foot/bike trail from Portola Valley to Junipero Sera.

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1 - Wider on-road bike lanes -- dangerous for both bikes and cars in many stretches. 2 - Bike Path - Access across Alpine and improvements and on-going maintenance to the "bike path" used for more casual biking and running. 3 - Side Street Access - Traffic count into/out of Ladera during peak hours is significantly impacted by lack of neighborhood public school causing round trips originating within Ladera. The private Woodland school creates peak hour round trips originating outside of Ladera. Combined the traffic impair access from/to La Cuesta and La Mesa. 4 - Underground utilities for reliability, aesthetics and safety.

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Need a pedestrian crosswalk at La Mesa and Alpine Road (to cross La Mesa) A roundabout at the intersection of La Cuesta and Alpine or La Mesa & Alpine would be great Establish 1 speed limit for the length of Alpine Bike lanes are too narrow, particularly when bikers are riding 2 or 3 abreast

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the intersection of Alpine and La Cuesta is very dangerous. Cars go by so fast on Alpine and it is hard for cars exiting La Cuesta to get out and it is also very dangerous for pedestrians. Also the corridor on Alpine Road between La Cuesta and Sand Hill Road is very tight and dangerous for pedestrians and bikers. I would love to see improvements there to create a safe bike lane.

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Propose traffic lights at Alpine/La Mesa and/or Alpine/La Cuesta intersections to improve safety. These intersections are dangerous because Alpine traffic usually exceeds the speed limit and the traffic flow is very complicated with pedestrians, bicycles, and cars moving in and out of La Mesa, La Cuesta, the shopping center, the gas station, the country club and Stanford land.

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The merge from 280 north onto Alpine Road toward Stanford doesn't work for anyone. At 8:30 in the morning, when kids are being bussed and dropped at school, commuters are trying to make their 9 am jobs, and Stanford students and employees are also hitting that road, it's a quagmire. I would love to see a separate exit from 280 for Stanford. Alpine Road is a major emergency access road for locals--try getting to the hospital quickly during any of the commute times, or even at lunch. It's a critical safety issue.

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The intersection at La Cuesta and Alpine is harrowing to cross on foot, a dangerous nightmare to make a left turn on to Alpine at heavy traffic times. We need a stop light. The intersection at La Mesa and Alpine is likewise difficult to cross on foot and for a left turn on to Alpine.

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I cycle commute from Ladera through Stanford campus to PAMF Palo Alto campus usually three days per week (not selection above). There are a couple narrow sections of the bike "lane" north-bound that worry me in mornings when cars are in bumper-to-bumper traffic, and drivers are not paying enough attention, thus often creep into the bike lane. Of course, crossing the 280 on/off ramps is challenging as well. I do feel the green lanes have been helpful. Please keep them clean and updated with new paint when needed. I am also a recreational rider and use the full corridor (further south of Ladera as well) at other hours of the weekdays and weekends. I have less concern during off-commute hours. Thanks for reaching out to the community members!

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Safer pedestrian crossing between the shell station and the walking/bike path. Traffic light by Alpine and 280.

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Certain intersections are particularly dangerous, due to speed of cars and amount of traffic. You know them already: La Mesa, the Ladera shopping center, the 280 interchange, etc. I would not have any problem with traffic lights or other traffic control measures. I'm not sure that California drivers really know how to handle roundabouts, but if that's the best thing, great.

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congestion where cars enter Alpine from 280 south. congestion from Alpine merging with Santa Cruz.

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Fix the bike/pedestrian trail.

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The bike lane should not be painted through the intersection on the east side of 280. Just like you don't paint the lines for car lanes through at intersection, you also generally do not paint the lines for a bike lane through an intersection. The intersection itself should not have paint (green, white, or otherwise), it should stop at the stop sign, then resume once you are through the intersection. The added paint for the bike lane is just one more thing that makes this area too busy and confusing with distractions. As the bike lanes approach the stop sign, you should end the bike lane paint (solid green and borders) and paint "stop" on the ground to encourage bikes to stop. Then once they pass completely through the intersection, the bike lane paint would continue. Ultimately, I think signal lights are needed though. It works just fine at Woodside Rd, and does not take away from the small town feel of the town, and is just safer and less frustrating for everyone.

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Improved walking trail along Alpine Rush hour traffic (morning and afternoon) between Hwy. 280 and Junipero Serra

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Traffic in front of Ladera shopping center

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Pulling out of La Mesa Drive onto Alpine Rd. it is difficult to see oncoming traffic because there is often an SUV or other large vehicle obstructing my view. At the 280/Alpine intersection, some cars do not stop at the stop signs.

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Please do not ever put a light at 280 or La Cuesta or La Mesa. Turning Left out of Ladera on to Alpine is not hard nor dangerous. It takes a couple of minutes of patience and using the turn out lane. You could add signs saying "Please use Turn Out Lane". And signs on Alpine noting the turn out lanes so people that don't know what they are (and there are many) don't freak out when a car does properly use the lane. thank you.

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Would really like a safer way for pedestrians to cross Alpine. Most cars do not yield. I saw a pedestrian almost get hit last year.

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Aggressive bike riders. Bikes at the traffic light at Alpine/Junipero.

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Would love it if the Stanford Marguerite (bus) made regular runs between their health center in Ladera (toward Portola Valley from La Mesa Drive, on the corner) and downtown Palo Alto and also one to downtown Menlo Park. I would like to use transit more but there isn't a regular service.

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Enforce 35 mph and it is safe for traffic to merge and pedestrians to cross

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Widen path from Ladera to Stanford dish like was done the other direction. Close exit nearest Alpine for Shell station or ban left turns from right lane as that is the biggest danger I see. Putting stop lights at intersections near Ladera is a bad idea as it would make traffic pile up at 280. Maybe lights that alternate between green and red letting a few cars through at a time during commute hours as they do on freeway entrances.

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traffic lights at junipero serra are not timed or set up for continuous moving traffic while west bound drivers turning left on JS Blvd the traffic going straight west on alpine are stopped and could be flowing towards 280 Since the lanes were added years ago the lights have not been set up to allow smooth and quick flow of traffic back and forth....

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traffic circle at 280 and at Juinpera Serra

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We DO NOT need traffic signals/lights on Alpine Road at either I280 or LaMesa/LaQuesta Roads in Ladera. The incidence of traffic accidents/injuries has been mitigated at Alpine and I280 thanks to CalTrans and the CHP (installation of rumble strips, channelizers and larger stop signs). The biggest issue is driver impatience or error and/or just plain being an inattentive, poor driver and not understanding how to use the 'merge lanes' on Alpine Road to ingress from the two Ladera streets.

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Traffic flow! How about a big roundabout to replace the stop signs at 280 and Alpine?

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1) When Stanford re-figured Dish parking at Junipero Serra, it created a mess at the Alpine gate. Because parking is right off the 280 north freeway exit, that area is an accident waiting to happen. 2) I now use the second entrance to Ladera west of the gas station to both enter and exit my residential area, but even with the "chicken lane," it's difficult to turn left on Alpine. How can one slow or create gaps in traffic going west on Alpine to ease that left turn?

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Road width, bike safety, signage

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The back up on Alpine Road in the afternoon between 3-6pm is constant. I would like to see a roundabout installed to replace the 3-way stop sign at the intersection of Alpine Road at the 280 on and off ramp.

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The Alpine Road exit from 280 is often clogged as two lanes merge into one going towards Stanford. There are just too many cars in our area, and this is the only access road to Palo Alto/Menlo Park.

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Cars speeding and not stopping for peds in crosswalk is a problem.

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1) Make the path safer for children and adults on bike and foot. This is a great commute and recreation option that is under utilized. We missed a valuable opportunity to fix the path a few years ago. 2) pedestrian activated crossings at Last Mesa and La Cuesta. 3) slow traffic so left hand turns out of Ladera are facilitated/easier.

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Paths and crosswalks. Better marking of crosswalks with on-demand caution lighting

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Intersection of La Cuesta and Alpine Road

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The road is fine and ever since adding the markings at 280, that stop sign situation is much better. The trail from Ladera Oaks to almost Stanford needs to be re-done... especially bad after the 280 stop sign. Please do not put traffic signals in... we don't need that. We need more patience and less construction traffic.

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Bikes and cars need to be separated especially at the two 280 off ramps. Cars traveling west on alpine at 280 need to be stopped from running the intersection.

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Slower speeds between 280 and Portola Valley Improved access from side streets onto Alpine in Ladera and a Weekend Acres (please consider roundabouts!) Or a light at La Mesa. Protected crossing areas between both sides in Ladera, SLAC entrance and weekend Acres.

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The section from 280 to Sand Hill Road, both directions, is the worst.

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Improve pedestrian safety crossing Alpine at La Cuesta and La Mesa Drives, as well as along Alpine. There is no way to safely walk from Ladera to Webb Ranch.

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Traffic on Alpine during rush hour causes huge back up. Often due to commuters working to avoid backups on Page Mill and Sand Hill to get to 280. Gridlock at Serra/Alpine intersection due to closely spaced lights, heavy traffic and poor intersection planning including Serra/Alpine and Sand Hill/Alpine. Major safety issue at 280/Alpine intersection. "Bots dots" and larger stop signs help but people still run stop signs. Traffic lights WILL NOT solve the problem, just significantly worsen traffic back ups. Fix the problems at Page Mill/280 intersection, that road is designed to handle more traffic and there is no residential in close proximity.

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Make it easier and safer to enter Alpine rd in Ladera. Make the trail alongside Alpine better. Alleviate the congestion on Alpine from 280 to Sandhill rd in the morning commute

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1. The walking path along Alpine from La Mesa to the Stanford dish, especially at the exit of 280. 2. Consistent speed limit (preferably 30 miles per hour or less) on the entire length of Alpine Road.

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So much of the trail needs improvement; especially the pavement - it is bumpy, damaged, uneven and old. I have turned my ankle more than once running that path. Additionally, the path needs widening. There are a few sections where the sidewalk runs out and you have to run/walk on Alpine road with the cars to continue. It is so clearly dangerous and really astonishing that it has not been changed already. I would love to take my kids on this path, but I am too terrified. When I am alone, I run as fast as I can through those sections so I don't get hit by a car.

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Anywhere that Stanford traffic impact traffic movement: 280 to Junipera Serra, Junipera Serra to the two entrances to Stanford. The best solution, though most expensive would be to have a freeway exit into Stanford and lighten the traffic load at commute times - 7:30 to 9:30. Set signals at the entrance to Stanford to vary with the traffic load in the morning, when the cars stack well into Santa Cruz, Sand Hill and Alpine often all the way to 280 and its off ramp. Some of the traffic to Page Mill and Palo Alto uses Junipera Serra, because the 280 OFF ramp (south) has a queue 0.5 mile long and moves slowly because there is no time adjusted signal at the Page Mill - off ramp. At any rate, Page Mill is also impacted by heavy commute traffic until 10:30 - 1 AM. Traffic planning has been absent while Stanford keeps building and expanding its student and work force. Getting from Ladera to a hospital at commute times requires excessive time. Emergency response would have the same problem. The Alpine corridor was adequate when I moved to Ladera in 1969. Portola valley traffic, to and from has increased enormously as well as the Stanford traffic. Expansion of the SantaCruz-SandHill-Alpine- Juipera Serra intersection was a first step. Is anything else planned??

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Need to improve visibility from La Cuesta for drivers turning left onto Alpine Road. The trees/shrubs along the roadway that impede visibility need to be cut back. Also, pulling out of Westridge Drive onto Alpine has problems with visibility when the large A T & T trucks park by their vault to do repairs. Frequently I can not at all see to the right when I pull out.

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Safe pedestrian AND bike lanes. Lower speed limits to make the current situation safer. Red lights at the intersection of Alpine and 280 on & off ramps.

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1. place the crumbling path on the south side of Alpine from Portola Valley border to Santa Clara border with an 8 ft paved path. Implement the plans previously turned down by the San Mateo County Supervisors. Now the county of San Mateo will get to pay for it after turning down the \$10 million from Stanford and giving it to Santa Clara County. 2. Install Lighted pedestrian crosswalk at La Mesa Dr and Alpine.

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The intersection of Alpine and Junipero Serra is a very problematic section in my experience. I used to always take this route to get to Menlo Park, or the Stanford Shopping Center, but now I prefer driving all the way around to Sand Hill Road or even Page Mill if it's any time after about 2-3pm. I have been forced enough times to sit in 30 minutes of stop and go traffic that I avoid the Junipero Serra/Alpine/Sand Hill intersection starting from the 280 interchange on Alpine Road. The length of road between 280 and this intersection is fine in my opinion, with maybe a need for a wider bike lane. I would hate to see it become an unsafe corridor with multiple lanes of cars in either direction, as that would not really solve the slow down issue. The stop sign intersection at 280 and Alpine has been a lifelong disaster. People coming from the Stanford direction will roll through while in a rush to get the next 100 yards onto the freeway, and often cut off those of us trying to turn left onto 280 North. It would be great to see this turned into a traffic signal just to prevent that non-sense. Otherwise I don't have many suggestions other than to man it with law enforcement for a few weeks and rake in some tickets. Moving back across the freeway towards Ladera, it would be nice if the road were somewhat wider to allow a median between traffic that does not stop, and the center lane. Folks do not use the center lane appropriately right now (i.e. at all), and it can take a very long time to exit Ladera while people wait for large enough gaps in both directions of traffic to make it all the way into their lanes. Some adjustments to the left turn lane heading East on Alpine and into Ladera at La Cuesta would also be nice, to direct traffic into the proper lane entering Ladera. I have almost been hit head on several times by cars turning into the exiting flow of traffic. I think it is because the left turn lane ends right there, and not another 30 feet forward where the lane is.

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Traffic on Alpine Road West of 280; Getting out of Ladera onto Alpine Road in the morning and evenings; Speeding on Alpine Road.

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The study area ends short of the real problem--the intersection of Alpine/Foothill Expressway/Alameda de las Pulgas. I think a roundabout could solve a lot of the traffic flow problems if one is installed at that intersection. A bike lane needs to be put on Alpine from that intersection to 280 and the road widened where it narrows from two lanes going West to one, imo.

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Would Shell donate the corner on which sits that ghastly sign to make enough room for a roundabout at Alpine and La Cuesta? Also, there are far too many speed limit changes in a very short section of Alpine Road going both directions.

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The corridor between Ladera(280) and Campus Drive West

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Traffic can be pretty heavy at times. Sometimes it can be very difficult to make a left into the shopping center or to make a left turn onto Alpine Road from the shopping center. I personally think we should have a traffic light there. Speed is also an issue. Would like to see the speed limit dropped.

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Traffic is consistently very slow heading toward 280 on Alpine from Sand Hill light (going west, or towards Portola Valley) It is also bad in morning heading toward Menlo Park. A round-a-bout at the Alpine/280 intersection would be much more efficient than the current 3 way stop sign. A traffic light would be a terrible idea.

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1) 280 and Alpine Road - would love to see a roundabout to help traffic flow. It would also prevent cars from running the light. 2) Stanford weekend acres slowdown. Removing truck traffic and attending to a roundabout at 280 would be a big help. 2) Help pedestrians use crosswalks safely, especially across from Ladera Shopper and the PAMF strip mall and church just west of there (toward PV).

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Back up of traffic on Alpine near 280 during commute times and during construction activities (which is often).

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The Page Mill road 280 intersection is so backed-up that people are cutting through Portola Valley and down Arastradero.

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The paths that along Alpine that Stanford was going to pay for but Weekend acres lobbied the supervisors against.

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Bike safety needs to be addressed. Also, there is excessive traffic from 280 that uses Alpine Road to drive out to Arastradero and cut through to Page Mill and other areas. This creates excessive traffic into Portola Valley area that is not local traffic.

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You need to fix the lack of bike path along the dish area along the neighborhood there. It abruptly ends from Ladera and doesn't pick back up until the golf course

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La Mesa and La Cuesta entrance/exit to Ladera - very difficult to get out given volume of traffic and speed of cars on Alpine. Cross-walks at La Mesa and La Cuesta - drivers do not slow down or stop for pedestrians. 280 intersection - complete mess - backs up to/from Junipero Serra each am and pm. Dangerous and confusing 4 way stop sign configuration. Path - difficult to use and at time dangerous.

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Redo the path. Make safe bike lanes. Fix the intersection at Page Mill and 280 so people stop using Alpine to Arastradero.

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Signals at J. Serra need to be better timed. Dangerous back-up onto hwy 280 during rush hour; bike path must be improved or actually created in some spots; signals also at Page Mill and Deer Creek AND J. Serra also should be better timed to avoid 280 back-up at Page Mill entrance and subsequent cutting through Alpine/Arastradero; stops signs inefficient, roundabouts at Alpine AND Page Mill much better solutions; overall volume of traffic can be reduced in a multitude of ways that should involve the major local employers; lighted crosswalk required at Alpine/La Cuesta.

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In no particular order: 1. Safe left turns out of Ladera at La Mesa and La Cuesta (lights, roundabout, better indication of pull-out lanes) 2. Safe pedestrian and bike crossing of Alpine at key points 3. Safe and protected bike path and lanes all the way from central Portola Valley to Junipero Serra -- the area near the dish parking lot is particularly unsafe 4. Better solution at Alpine/280 intersection -- lights preferred 5. Add stop lights at Page Mill/280 intersection -- Alpine traffic directly impacted by this intersection 6. Add left turn pull-out (middle ) lane at Arastradero/Alpine to help traffic flow 7. Paint arrows in middle lane in front of Ladera Shopper and Ladera medical complex to encourage use

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1. Improve traffic flow along Alpine Corridor from I-280 to Sand Hill Road during morning and evening commute time. 2. Fix Page Mill southbound exit problem (traffic back-up) so cars don't use Alpine Road corridor as an alternative. 3. Suggestion: Since many cars using the Alpine Road corridor are Stanford employees, have Stanford provide public transportation options such as off-site park and ride (similar to tech company buses).

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Suggestions for the Project Team: 1. Flashing Cross Walk Road lights (embedded in the ground/cross walks) at La Mesa/Alpine and La Cuesta/Alpine. Pedestrians cannot cross the street without flagging down cars. Drivers do not stop. This issue is not patrolled, none would it require enforcement by the CHP or San Mateo County Sheriff...which is unrealistic to expect, and would be a complete waste of their resources. 2. Fix and connect a safe Alpine Road walk/bike path from the Portola Valley Town line to the Sand Hill/Juniper Serra intersection. San Mateo foolishly rejected \$11,000,000 a few years ago that would have been dedicated to do that. The stupidity of the San Mateo Supervisors (to not take the required money) from Stanford a few years ago has now left me paying for it through my taxes with this study and potential project. My tax payments should benefit me as well. San Mateo sucks more tax money from the Alpine section of the county than any other section in the county. But puts little emphasis on this area. More improvements are definitely needed. Tax payers are sick of paying and not getting any benefits allocated out here. 3. Eliminate some of the 100+ signage from I 280 to the Portola Valley Town line. Over Signage does not fit within the design of the scenic corridor, and it is becoming a complete eyesore, taking away from the country feel. The one way sign at the La Cuesta Exit needs to be removed. It blocks the view of all drivers exiting La Cuesta onto Alpine and makes it difficult to see oncoming traffic. San Mateo Public works seems to keep assigning more and more sign projects to Alpine Road. There is no need. 4. Town meetings like the one I attended last night are not fully represented by the area demographic. I felt it was a completely disorganized way of collecting data, and the woman who led the meeting was not truthful in her math as to the percentages of represented people. You need to implement a required and more accurate data collection online survey/focus study, in order to have a fair and accurate representation. This study should not only rely on the "available elderly demographic" to make suggestions only. Young professionals, families, singles as well as the true road biker community need to be represented. Having an elderly representative of a local bike coalition suggest the potential changes that would increase the safety of the road biking community is not representative of the many bikers who ride the Alpine Loop daily as well as commute to work. Greatest Need for Alpine Residents: This commissioned Alpine Scenic Corridor study is a complete waste of time if you do not involve Stanford, Palo Alto, Menlo Park and Santa Clara County in this study...and hold them equally accountable for the financing of the recommended project changes/repairs. The traffic problem exists simultaneously on Page Mill, Alpine and Sand Hill Roads impacting our lives daily as a resident. It is foolish to only look at the Alpine Road corridor issues. You will not be able to fix or change the traffic problems without creating new traffic problems, if you naively narrow your focus to Alpine. 25,000 cars a day is not reflective of the rural scenic corridor. Look at the projected traffic estimates from Stanford's (botched) fix of Juniper Serra/Sandhill. It's now been 10 years of backed up traffic. This is more a regional problem that should be handled by Cal Trans with coordination of the surrounding county public works departments, and should definitely not be studied using only San Mateo County funds. The point person at San Mateo County Public Works who commissioned this study, needs to dig in deeper and coordinate with the surrounding cities, counties and state authorities to come up with a joint proposal. Have some grit and require Stanford to get involved and get their wallet out. Why should I as a taxpayer pay for their created traffic mess. Stanford, Palo Alto and Menlo Park businesses bring in an absurd amount of daily traffic, which backs up onto I 280 daily from 7:45 to 9:00 and creates a logjam on Alpine & Sand Hill every afternoon at 4:00 with the return commute home.

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The exit from la

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difficult to get onto Alpine in Ladera due to high traffic. Why does the speed sign increase eastbound approaching stop Need calming thru Ladera

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the stop signs are clogging traffic. perhaps a second lane needs to be added along the corridor between Juniper Serra and 280

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Lights are not synchronized so traffic builds up at sand hill and juniper serra intersections. Cars travel much too fast. hard to enter from the Dish parking or the horse park with traffic at high speed. Back up of traffic off of 280 onto page mill and sand hill encourages folks to use alpine rd - which is not big enough to accommodate all the traffic. Page mill is excellent via duct into palo alto and onto 101 from 280 - if the exit off of 280 was not a PAINFULLY SLOW STOP SIGN ROUTINE. Also, page mill exit is dangerous - as folks traveling from 101 (east to west) don't see the stop sign and blow through it - I have seen several near misses. scary.

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Needs four lanes all the way to santacruz ave and a better bike path on the side

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The Ladera Neighborhood Association has approached the county several times requesting an illuminated pedestrian crossing sign at both of the crossings listed below and has been ignored. It is an urgent safety matter. On Alpine Rd at La Mesa Dr and La Cuesta Dr there is an urgent need for illuminated pedestrian signs and blinking lights in the crosswalk on the road. Traffic does not stop for pedestrians trying to cross Alpine to get to the jogging path along the road. Traffic comes flying down Alpine Rd from upper Portola Valley, which is a predominantly rural area without sidewalks, or up Alpine Rd from the 280 fwy exit, and drivers are simply not anticipating pedestrians. It is incredibly dangerous. As a resident of Ladera, I have seen several near misses, one with a twin jogging stroller, as people try to cross half way with one lane of traffic stopping but then the other lane does not stop. It is a horrific accident waiting to happen. Please clean up all the signage around the Ladera Shopper that is confusing and redundant. Remove all the multiple pedestrian crossing signs that are currently there and replace them with two LARGE blinking pedestrian crossing signs at each cross walk as well as blinking safety lights embedded in the crosswalk.

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I-280 @ Alpine intersection: Traffic seems unable to follow the basic right-hand rule for taking turns. Bikes go through the stop signs without stopping or simply take their own turns often against traffic. A stop light is necessary and I would support it, but probably will meet with significant resistance. I would also support a round-a-bout.

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Safety at Alpine/280 interchange, especially for bikes but also vehicles. My wife was struck there (in her car) by a truck that never slowed down. There needs to be complete separation of bike and pedestrian traffic from vehicles. A roundabout with a bike/pedestrian bridge would be an option.

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any way to relieve the traffic congestion in the morning and evening rush hours would be great. I don't have any obvious answers or suggestions to this problem.

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Speeding cars on Alpine, particularly from 280 to Westridge drive. Has anyone considered a real traffic circle where the stop sign is at Alpine and 280?

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Traffic from 280 to Junipero Serra, both directions. Right turning cars from J. Serra onto bridge between Alpine and Sandhill, which prevent the straight-going right lane traffic eastbound on Alpine rd from getting through intersection. Huge backups in this right lane at rush hour. I've sat through multiple lights not moving. Then frustrated drivers make bad choices and it gets crazy.

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Bridge just east of Webb Ranch

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1) Stop sign at Alpine Road and La Mesa Drive to allow traffic to safely exit Ladera, slow the speeders through Ladera, and allow safe pedestrian crossing to pedestrian paths, 2) continued thought and improvements to Alpine Road and 280 intersection - signalization may be needed there, and 3) pedestrian path improvements to the decrepit path along Alpine that has been in disrepair for more than 20 years.

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Traffic from Stanford/Junipero Serra and Page/Mill Alpine Rd gets too backed up going into PV and getting on the 280 Alpine onramp.

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1) Reducing the traffic to/from 280 onto Alpine Road 2) Finding an alternative route for people so they stop clogging up Arastradero Road in the evening commute

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With elementary aged kids who ride the bus, run and bike, my priority is to support safe and efficient bicycle, pedestrian and transit - particularly interested in a class 1 bike path that would be safe for my kids to ride their bikes to school or downtown Menlo Park. My second priority would be to facilitate side street traffic. To help control the often speeding and heavy traffic on Alpine which complicates access at intersections with La Mesa and La Cuesta drives, the primary avenues into and out of our community...people take risks and it scares me especially when you add in pedestrians and bicycles.

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90% most important: - the intersection at alpine and 280 is dangerous. Even with gigantic stop signs I see cars blow through it 2-3x a week. That is not an exaggeration. (This als includes cyclists — i am one, this isn't a cyclist rant — who ignore the stop sign during traffic hours and create conflict.). We've seen too many people get injured / die by having to ride through the highway merges on 280 and the same is happening at Alpine, even with nice big green stripes. the rest: - Ladera private school dropoffs in the morning create congestion at la mesa / la questa - People routinely make right turn off alpine into one-way street side of la questa towards shell station - congestion and confusion in turn lane for la mesa and turn lane for ladera shopper 100 ft later (heading eastbound on alpine - Cars do not stop for pedestrians in crosswalks

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Traffic backs up all the way to 280 when you are trying to get from PV via the Corridor towards Menlo Park during commute times. Dangerous to try and exit Stanford Acres as the traffic is thick, fast and visibility is poor.

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Traffic back-up between the two signals (Junipero and Sand Hill) when the Sand Hill light is red and the Expressway light is green. A problem during heavy traffic times (commute times). Also, the green light from Sand Hill through the expressway light is very long. Perhaps the right land could be left green but the left turn onto the expressway could turn red allowing opposite traffic to pass w/o any conflict.

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1. Turning left from La Cuesta to Alpine is too congested - never use it during rush hours. 2. Would like to be able to cross Alpine Rd. to the walking path more safely at La Mesa and/or La Cuesta. 3. Need better signage for cars going to Shell station - often see cars driving the wrong direction to enter the gas station. 4. Would like to have a wider, safer bike path from Ladera to Junipero Serra. Would never, EVER let my kids ride their bikes on that stretch, even when they are old enough to do so.

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#1 From Ladera to Sand Hill / Junipero Serra bike access. There is no safe way to transit east by bicycle. #2 From Junipero Serra / Sand Hill to Ladera. Bike transit requires one to enter and then cross the vehicular traffic. Needs a dedicated bike section that does not cross the freeway on ramp. #3 From Ladera to the south side of Alpine. There is no safe way to cross, particularly for children. My top priority would be to provide dedicated bike access from Ladera to Menlo Park / Stanford. This should be separated from traffic enabling children to ride to their schools which are on the other side of the freeway.

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I would like to see a safer multi-use pedestrian and bike trail between Ladera and Sand Hill Road, a safer way to cross (on foot) Alpine Road at La Cuesta Blvd and at La Mesa Ave, and a longer and wider acceleration lane at La Cuesta Blvd.

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Smooth flow of car traffic, at safe speeds, along Alpine west of 280. Would strongly prefer that no stop signs or traffic lights be introduced into this corridor -- that would be overkill for the current problem. Continued focus on improving safety & visibility at the 280/Alpine intersection. Even with recent improvements, we continue to see cars blow clueless through that intersection, typically coming from the direction of Stanford (probably drivers who are first-time or infrequent users of that intersection). Eventually, this is going to result in a head-on or t-bone collision with very serious injuries. Is there any kind of signage/sensor that can sense when a driver is approaching that intersection at an unsafe speed and blink? (like the portable speed-limit signs that blink when a driver is going too fast)

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Safer crossing at La Mesa and La Cuesta. Crossing Alpine Rd is very dangerous! Even at the cross walk by La Mesa/Alpine cars don't stop if you stand waiting to cross. I have seen cars speed through here.

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The lack of a useful multi-use trail that connects Ladera (where I live) to Menlo Park is a terrible shame. It prevents my family from walking / jogging / biking together to their schools, Sharon Heights or the Stanford Mall safely. We were extremely disappointed with the outcome of the Stanford Trail decision a few years ago, and we have yet to get a resolution to the aging, unsafe trail. Secondly, adding traffic circles at the Alpine / La Cuesta and Alpine / La Mesa intersections seems like a great solution to reducing speeds, and increasing the safety and ease by which people enter Alpine from side streets. Could perhaps be used in from of Weekend Acres as well.

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Improve the path from Alpine to Sand Hill for bike and pedestrian safety.

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1). I don't feel safe crossing Alpine Road on foot, at either La Mesa Drive or La Cuesta Drive. Cars do not slow down to let pedestrians cross - either they don't see the pedestrians or they don't care/know pedestrians have the right of way. Can you add a Rapid Rectangular Flashing Beacon? Or, a traffic light that is almost always green for traffic, except when a pedestrian pushes a button to cross? I value safety over feeling 'rural'! 2). I don't feel safe biking along Alpine Road with my children, especially where the trail narrows or disappears (along Stanford Dish and Stanford Weekend Acres). I think it would be great for our kids to be able to bike to school. As is, there is NO WAY I would let my kids bike along Alpine Road. Ideally, there would be a Class 1 Bike Path the entire distance between Ladera and Sand Hill Road. This may help alleviate car traffic on Alpine Road. Parents currently drive their kids to and from school/after school activities because they do not want their kids biking on Alpine. 3). I believe the acceleration lane at La Cuesta Drive is too short. People are afraid to turn left into the lane, so traffic backs up on La Cuesta. Can you make the acceleration lane wider and longer? 4). I don't think there should be manhole covers in the bike lane on Alpine Road (from Portola Valley to 280). Can you move these out of the bike lane? Or lessen the dip?

# ALPINE ROAD CORRIDOR STUDY

## PROJECT MEETING

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Summary of Community Meeting  
Monday May 9, 2016

The San Mateo County Public Works Department hosted a community meeting on Monday May 9<sup>th</sup>, 2016, from 7:00-8:30 p.m. to discuss the Alpine Road corridor in the vicinity of Interstate 280 (between La Mesa Drive and Stowe Lane). The meeting was held at the Woodland School, 360 La Cuesta Drive in Portola Valley. Over 65 community members attended the meeting.

County staff Joe Lococo (Deputy Director Road Services), Diana Shu (Senior Civil Engineer), and Hanieh Houshmandi (Associate Civil Engineer) attended the meeting. Adam Dankberg (Kimley-Horn Project Manager), Corbin Skerrit and Daniel Carley (Kimley-Horn Engineers), and Eileen Goodwin (Apex Strategies, Community Outreach Lead), represented the project team. There were also representatives from the California Highway Patrol (CHP), Menlo Park and Ladera Fire Districts and Stanford University.

This was the project team's second meeting with the community regarding this project. This current study effort and project team hosted its first community meeting in January 2016. A meeting staffed by the County was also previously held in February 2015 to capture input to guide the project scope. The purpose of this community meeting was to get input from the community on the initial set of improvement alternatives proposed for the corridor. Sixty percent (60%) of the attendees indicated that they had attended one or more of the prior meetings with forty percent (40%) saying this was their first meeting on the project.

### **Meeting Summary:**

The meeting started at 7:00 p.m. In addition to the personnel there to answer questions and present information, over sixty-five (65) members of the public attended. Seventy-five percent (75%) of those in attendance at the start of the meeting indicated they received the mailed meeting notice. About 60% said they received an e-vite for the meeting. Nextdoor was acknowledged as another way attendees found out about the meeting from 30% of the attendees. Ten percent (10%) said they heard about the meeting through word of mouth, 40% saw the meeting advertised on the Ladera email list, 30% on the Stanford Weekend Acres list and 20% on the Portola Valley list.

After a brief introduction by the County's Deputy Director of Road Services, the Kimley Horn project manager spoke to a PowerPoint presentation. The presentation oriented attendees to the purpose of the project, noted previous community feedback, project objectives, proposed evaluation criteria and a number of the project improvement alternatives.

To close the presentation, the Kimley Horn Project Manager presented the process and a schedule of next steps. During and after the presentation many questions, suggestions and opinions were offered to the staff and project team. The comments and responses offered during the meeting are captured below in the order they were given.

The meeting format also included twenty (20) minutes of time for attendees to give additional input or ask questions at two separate stations. That input has been captured in photos and text at the end of this meeting summary. The stations included VISSIM traffic simulations of the various project improvement alternatives shown on computer monitors and maps of the project area with the project improvement alternatives highlighted. Stations were divided by geographical area. Comments, suggestions and issues were posted by attendees using sticky notes and writing directly on the boards. In addition, each attendee was given a sheet of red, yellow and green dots to provide positive/negative/uncertain feedback regarding each individual potential improvement.

This meeting summary also includes a transcript of the meeting comment cards that were handed in at the meeting. They are listed at the end of the table below:

Comment/Question	Response
The presentation seems to be only focusing on southbound—was data collected and projects analyzed for both directions?	Yes, the team looked at both directions and all movements.
What about pedestrian lights in the pavement like in Redwood City?	That style of activated pedestrian crossing is more difficult and expensive to maintain because the lights need to be frequently replaced.
Do roundabouts only work where a signal would be warranted?	No, roundabouts can be utilized in more locations, however they can be more expensive and require more right-of-way.
For the time savings chart, where did you look at the delta in time?	The time savings were measured between I-280 and Junipero Serra Boulevard in both directions.
When you look at the efficiency of traffic lights do you measure or weight the flow in all directions or just the main direction on	We look at the overall delay for all movements. Please look at the traffic simulation videos to get a better idea of resulting traffic conditions with the improvement alternatives.

Alpine?	
What is the difference between 'afternoon' and 'P.M.' peak?	Afternoon peak hour is between 3:00pm and 4:00pm. P.M. peak hour is between 5:00pm and 6:00pm.
This team does not have a clue about Alpine. There will be a 20% increase in traffic from Stanford development. The maps show a bus stop that has not been used in years. Residents' problems are not considered.	The regional model, which the team used for the modeling, does take into account any traffic increases from the Stanford development.
This team has listened to us. Let's give them a chance to present the information.	
Will the proposed traffic signals have the ability to be triggered by vehicles or will they be on set timing?	Traffic signals would be actuated, which means they would be triggered by the vehicles when needed.
If some of these options are agreed to, how long until we would see construction?	It depends upon which projects will move forward. Some of these the County could move forward with within months of approval. Other projects, such as signals and roundabouts are more complex and would need environmental clearance, right-of-way and in some cases Caltrans approvals which would take much longer, possibly 3-5 years.
Which is most effective signals or roundabouts?	It depends on the context. The signals create platoons of traffic (groups of traffic moving together) which allow better side street access. Roundabouts keep traffic flowing smoothly but take up more right-of-way. Both can be effective. In the area around I-280 specifically, signals would be more effective. In the other areas, it is less of a difference between the two for functionality.
To improve the flow between Junipero Serra Boulevard and I-280 on Alpine and show that is an improved	That would be true if these were the only improvements being made. Improvements are being considered and proposed for Sand Hill and Page Mill Road as well. These areas are

<p>condition is not realistic. Since there is so much pent-up demand from Sand Hill Road and other routes, the new capacity on Alpine will get eaten up and we will be no better off than today. We will have the same traffic.</p>	<p>interconnected.</p>
<ol style="list-style-type: none"> <li>1. Why have speed bumps been dropped from consideration?</li> <li>2. Can Alpine Road have a truck ban? There are a lot of construction related trucks going on Alpine Road.</li> <li>3. Can Sand Hill Road be made more efficient to keep that traffic from spilling over onto Alpine Road?</li> </ol>	<ul style="list-style-type: none"> <li>• Speed bumps work well on roads with speed limits of 25mph or less. The speed limit on Alpine Road is 40 mph (proposed as part of this project to drop to 35 mph). It would not be safe to have speed bumps.</li> <li>• Caltrans is unlikely to approve a truck ban on Alpine Road as it has freeway access. Also, a truck ban would not limit trucks who have legitimate business on or adjacent to Alpine Road such as residential construction projects.</li> <li>• As previously mentioned, Alpine Road is part of a regional strategy to deal with traffic in this area including Sand Hill Road. It is unlikely that signals will be taken off Sand Hill Road, however there are projects underway that will improve traffic flow and efficiency on that roadway.</li> </ul>
<p>Concerned about utilization of LOS as a metric to measure these project alternatives. This LOS metric favors car traffic over other modes such as bikes and pedestrians.</p>	<p>LOS is only one of many metrics the team is looking at. The functionality of bicycle and pedestrian circulation and safety is also very important.</p>
<ol style="list-style-type: none"> <li>1. Please explain how this project is coordinating with the trail project.</li> <li>2. What about emergency access?</li> </ol>	<ul style="list-style-type: none"> <li>• The trail project you are referencing is further along but its scope is to stabilize the trail and match the existing width and alignment. Our project alternative would add additional elements on top of the new project.</li> <li>• Some of these project alternatives will improve emergency access such as the</li> </ul>

Will that be improved?	longer merge areas and improved corridor access.
Will this set of projects add metering lights onto 280?	No, there are no plans for metering lights.
When would the implementations be for alternatives 2 and 3?	Signals and roundabouts are complex and would need environmental clearance, right-of-way and in some cases Caltrans approvals which would take possibly 3-5 years.
Which solutions will solve the access problem?	The longer turn pockets, providing longer acceleration lane merge, providing turn pockets and center-turn lanes where they don't exist today, eliminating the queue at the northbound I-280 ramps and fixing the sight distance issues related to overgrown landscaping.
If a signal is added at both La Mesa and La Cuesta then people will go out onto the one closer to their destination to eliminate having to go through two signals.	That is certainly possible, although signal delays are anticipated to be fairly short, limiting the benefits of such a maneuver.

<b>Comment Cards</b>
Please, please improve the path along Alpine. It needs to be widened and moved away from the road. It is not safe for anyone. Thank you!
The proposed paved Dish parking lot at Piers Lane would be a big problem. This would destroy many heritage trees and remove my protection from Alpine Road please contact me.
<ol style="list-style-type: none"> <li>1. Please look at increasing carrying capacity of Alpine Road either 4-lane (very expensive/difficult) or 3-lane (2 plus 1) like Golden Gate Bridge.</li> <li>2. Adding impediments on Alpine Road ex. Lights, roundabouts, or reduced speed will increase car density (number of cars per mile) and increase congestion at choke points.</li> </ol>
Consider asking AT&T to improve the aesthetic appearance of the switchgear boxes. Art competitions for proposed repainting for example. Similar to Palo Alto or San Jose. These boxes are ugly!

<ol style="list-style-type: none"> <li>1. If limit is 35 mph, need enforcement campaign until it sinks in.</li> <li>2. Northbound from 280 means I have to leave 45 minutes early for appointments before 10 a.m. nothing works unless Junipero Serra and Sand Hill signals to allow Alpine to clear every cycle.</li> <li>3. Dots are too small to use effectively.</li> </ol>
<p>I like the roundabout at La Cuesta and La Mesa.</p>
<p>Second example of consultants ramrodding.</p>
<ol style="list-style-type: none"> <li>1. It is really important to me that my kids are able to cross Alpine Road at La Cuesta and La Mesa Drive.</li> <li>2. Bike or walk safely from the Ladera Shopper to Stanford campus. I love the idea of raised and /or landscaped ped/multi-use paths to/from Ladera.</li> </ol>
<p>Metering lights for on-ramps to 280 north from Alpine Road through Woodside would improve throughput and reduce congestion.</p>
<ol style="list-style-type: none"> <li>1. Doesn't address Stanford Hospital expansion.</li> <li>2. Times are totally unrealistic. I have spent 15-20 minutes between Stowe and Junipero Serra.</li> <li>3. Doesn't address Menlo Park area which is key. Doesn't address coordinating with Stanford.</li> <li>4. Doesn't deal with problem between the Alpine Sand Hill intersections. Doesn't deal with emergency vehicle access at intersection. Doesn't deal with illegal U-Turns at Buck Estate.</li> </ol>
<p>Fire District Comments:</p> <ol style="list-style-type: none"> <li>1. Please provide 96' cul-de-sac, 44' turn radius on all turns, access for fire and other public service vehicles.</li> <li>2. Provide signal pre-emption on new signals for emergency vehicles.</li> <li>3. Minimum 20' roadway width, minimum 10' lanes as engines are 10' wide.</li> </ol>
<p>Concern for people going to Portola Valley use the middle lane considered a pocket lane to pass people turning right on to La Mesa although it is illegal they do it. Is there some way to protect people in the pocket lane? Many people just don't use it realizing the danger.</p>

1. Would like to see data going into the computer models.
2. I think the model is aggressive in how drivers pull out.
3. Want to see traffic when Woodland drop-off is happening. Mornings 7:45 to 8:15 a.m.

Yes, please widen the bike paths connecting Ladera to Stanford and empty the bike path traffic somewhere safer. The more scenic and further away to cars the better. The current bike path is a hazard!!! Love the idea of a longer middle lane usage for exit/entrance from/to side streets. Smart sensor based lights are overdue; have waited for Junipero Serra and Sand Hill at 1:00 a.m. for upwards of 5 minutes (more like 5-10 minutes cumulatively). Heck, we live in Silicon Valley and it is absurd the numbers of times I wait for non-motorists at these lights and cross streets. We need many more parking spots for the Dish. There are many days when the parking by hikers goes all the way to Webb ranch. The number of spots on the map looks woefully suboptimal. By the way, leaving 6-12 inches on either side of the bike path/walk paths for all the runners who prefer to run on soil rather than cement would be so much better and is likely less costly to maintain. Please consider it. How can this be accessed, the other bike path project? Is there a website for the other project? An email address? Please let me know. I would be very appreciative.

1. With two lights (at La Mesa and La Cuesta) people turning left of La Mesa will have two lights before they pass the shopping center. Most likely they will pull onto Le Cuesta to avoid two lights.
2. It seems to me non-intrusive solutions should have been given more consideration such as speed bumps on Alpine and enforcement of speed limit, etc.

How about putting “Keep Clear” boxes on Alpine at each of the intersections with Stowe, Bishop, Wildwood? That would at least enable residents coming from or going to these streets to get into or out of the pocket turning points.

1. Has any funding been identified? RRFB’s are great and would be implemented immediately.
2. No traffic signals!!! It will cause massive backups by 280.
3. Roundabouts would be good—particularly put one at Page Mill—will reduce traffic at Alpine.
4. Reducing number of cars travelling on Alpine is not addressed—improvements to SNR and Page Mill.

I will comment on-line but thank you for your efforts this far. I hope especially pedestrian paths get uniformly widened with buffers for safety and key other

objective to slow traffic.

### **Simulation Station**

The simulation video station displayed videos for the alternatives and divided them by location (i.e., the Ladera Area, the I-280 area, and the Stanford Weekend Acres Area) for attendees to comment on the proposed traffic operations with the alternatives' implementation.

Some common comments received are below:

- Think of alternate ways to implement roundabouts and maybe look at case studies outside of the US (such as Switzerland), especially in terms of integrating multi-modal facilities in roundabouts.
- Particular concern was raised for cyclists using the roundabouts, especially at the I-280 ramps with the dual circulating lanes. A few attendees commented that it seemed very unsafe for cyclists and that taking the more conservative bike path (i.e., path adjacent to the RAB and outside of the circulating lanes) would be undesirable as it goes out of the way and requires crossing the legs instead.
- One attendee commented that bulbouts were undesirable for cyclists in terms of lane spacing, even though they help pedestrians.
- A few commenters were not sure of the aggressiveness of the model and that it seemed too optimistic.

The videos were made available for the public to view after the meeting via a YouTube link posted at the County's website.

### **Board Station**

Six boards were displayed focusing on proposed improvements for the corridor. For each area (Ladera area, I-280 interchange area, Stanford Weekend Acres area), the boards showed existing conditions and the improvements proposed as part of each of five improvement alternatives. Improvements were categorized and grouped as alternatives based on their magnitude of effect and complexity for implementation. It was noted that improvements can be selected from different alternatives and that improvements in general are mutually exclusive. The five alternatives are:

- Existing Conditions;
- Alternative 1: Minor Improvements;
- Alternative 2: Signals and Minor Improvements;
- Alternative 3: Roundabouts and Minor Improvements;
- Alternative 4: Signals and Major Improvements; and
- Alternative 5: Roundabouts and Major Improvements.

Attendees were asked to provide their opinions of the proposed alternatives by placing either a green, yellow, or red dot along with comments, if desired. The color of each dot represented a sentiment described below:

- Green – Like the proposed improvement
- Yellow – Unsure or need more information
- Red – Dislike the proposed improvement

A summary of the opinion feedback for the Ladera area can be seen below:

Improvement Type	Feedback		
	Like	Unsure	Dislike
Enhance/Shift La Mesa Dr crosswalk (Alts 1-5)	10	0	3
Signal at La Mesa Dr (Alts 2,4)	11	0	25
Roundabout at La Mesa Dr (Alt 5)	30	0	5
Restrict shopping center driveway access (Alts 1-5)	1	2	0
Restrict gas station exit at La Cuesta (Alts 1-5)	4	0	0
Widening median to provide turn lanes at La Cuesta Dr (Alts 1,2,4)	0	1	0
Signal at La Cuesta Dr (Alts 2,4)	16	1	60
Roundabout at La Cuesta Dr (Alts 3,5)	52	0	12
Install raised median north of La Cuesta Dr (Alts 2,4)	1	0	0
Remove crosswalk at SF Creek Rd (Alts 1-5)	0	2	2
Bike slots & Buffered bike lanes (Alts 1-5)	7	0	0
General path widening (Alts 1-5)	48	0	1

*Note: Reflects total dot quantity across all alternatives where improvement is proposed*

Roundabouts were strongly supported at both the La Cuesta Drive and La Mesa Drive. Traffic signals at those locations, particularly at La Cuesta Drive, were strongly disliked. Widening of the path to eight feet where feasible was strongly supported. Most participants were generally in support of more minor improvements such as the crosswalk modification at La Mesa Dr, the driveway restrictions at the Shopping Center, and bike lane improvements.

A summary of the opinion feedback for the I-280 interchange area can be seen below:

Improvement Type	Feedback		
	Like	Unsure	Dislike
Shift crosswalk at ramps to improve sight distance (Alt 1)	0	1	1
Conversion of free right turns at SB ramps (Alts 2,4)	3	4	0
Removal of free southbound on-ramp from NB Alpine Rd (Alt 4)	0	1	9
Extend NB ramp merge (Alts 2,4)	1	1	0
Signals at I-280 ramps (Alts 2,4)	20	0	25
Roundabouts at I-280 ramps (Alts 3,5)	40	0	15
Removal of roadside parking from southbound Alpine Rd (Alts 2-5)	1	0	0
Dish trail/Piers Lane parking lot modification (Alts 2-5)	24	6	23
General path widening (Alts 1-5)	8	0	0
Bike lane buffer extensions (Alts 1-5)	4	0	0

*Note: Reflects total dot quantity across all alternatives where improvement is proposed*

Roundabouts garnered more support than traffic signals at the I-280 interchange. However, there were many comments expressing concerns of how bicyclists were to use the roundabouts. There were also concerns about delays the traffic signals would cause to cyclists. One commenter also indicated that signalization was necessary at Piers Lane. There was fairly even support and dislike for the proposed Dish trail and Piers Lane parking lot modifications. Concerns raised were impacts from such a parking area on the residents off of Piers Lane. The other more minor improvements garnered positive support, such as general path widening and enhancements to the bike lanes. Additional education is likely needed regarding the conversion of the free right-turns at the freeway on/off-ramps.

A summary of the opinion feedback for the Stanford Weekend Acres area can be seen below:

Improvement Type	Sentiment		
	Like	Unsure	Dislike
Extend guardrail south of Bishop Ln (Alts 1-5)	0	0	2
Shift stop bar at Bishop Ln closer to Alpine (Alts 1-5)	15	0	14
Install crosswalk and ADA ramps across Bishop Ln (Alts 2-5)	1	0	0
Paved parking/path area on Bishop Ln (Alts 2-5)	6	0	23
Two-way left-turn lane median at Wildwood Ln (Alts 2,3)	4	0	2
Consolidated driveway access at Wildwood Ln (Alts 4,5)	23	0	6
On-Street Path Extension to Stowe Ln (Alts 2,3)	24	1	5
Off-Street Path Extension to Stowe Ln (Alts 4,5)	23	4	17
Extend acceleration lanes and/or turn pockets (Alts 2-5)	5	0	0
Shift roadway to widen bike lane to 5' (Alts 4,5)	2	0	0
Improve northbound bus pullout and stop (Alts 1-5)	4	0	0
Improve southbound bus pullout and stop (Alts 1-5)	0	0	11
Clear vegetation for sight distance improvements (Alts 1-5)	0	0	1
General path widening (Alts 1-5)	8	1	4

*Note: Reflects total dot quantity across all alternatives where improvement is proposed*

Improvements that were liked by most attendees include the consolidated street access at Wildwood Lane and extension of the multi-use path to Stowe Lane. Improvements that were disliked included the paved parking/path area on Bishop Lane and improving the southbound bus stop. A comment was provided that formalizing parking at Bishop Lane may encourage Dish Trail users to park there. Improving the northbound bus stop was viewed positively. In addition, most people were in support of facilities which enhanced side street access, such as shifting the stop bar closer to the corridor at Bishop Lane, two-way left-turn lane median treatments, and extending acceleration lanes and turn pocket lengths. Respondents were also generally in support of bike lane and path improvements.

### ***Additional Post-Meeting Feedback***

A SurveyMonkey online feedback forum was provided to solicit additional feedback from the attendees and general public concerning the proposed alternatives. The survey was made available for three weeks and the team received a total of 48 responses over that period. In addition, ten emailed responses were received by County staff during that period. Common themes from the comments in both the surveys and emails are discussed below:

- There was a number of survey comments (21 or 44%) indicating concerns associated with cyclists interacting with the roundabouts, specifically the dual lane roundabouts at the I-280 ramps. Respondents did not like the idea of cyclists going through the roundabout or having to divert to the shared pedestrian/bike crossings over the roundabout legs.
- There was a smaller number of survey comments (12 or 25%) indicating concerns associated with signals at the I-280 ramps, specifically for cyclists. Most state that the current all-way stop-controlled configuration is safer than a signal.
- There were varying comments regarding roundabouts and/or signals in the Ladera area. Some respondents preferred one over the other or did not think a change was merited at all.
  - Those in support of roundabouts or signals thought improvements would be an effective way to control speeds.
  - Those in opposition thought that enforcement of the current speed limits as well as properly using the existing infrastructure (such as acceleration lanes) was all that was needed.
- Approximately 80% of respondents supported all the initiatives in Alternative 1 which included the minor improvements that would not require right-of-way and no major changes to the I-280 ramps; many of those respondents also wanted the Dish parking lot improvements added to this alternative. The remaining 20% did not support the trail improvements as there are already trail improvement plans currently underway and they did not support the Dish parking improvements. The rationale provided was that paving of any sort along with vegetation removal would exacerbate current drainage issues residents have in addition to damaging the creek. They also felt paving a parking lot would simply encourage more traffic and that parking should not be allowed.
- Approximately 70% of respondents specifically indicated the need to reduce speeds on the corridor as a whole.
- Approximately 10% of respondents indicated the desire to have green striping within all of the bike facilities on the corridor and not only at conflict points. They indicated the importance of Alpine Road as a highly utilized bike facility.
- Several residents in the Stanford Weekend Acres area still requested to consider traffic signals at Piers, Bishop, Wildwood, and Stowe Lanes. Comments noted the safety of side-street access and sight distances,

especially given the current speeds and projected increases in traffic. Most of these respondents also supported the acceleration lanes and center turn lanes on Alpine for the same reason.

**Pictures**











#	ID	Date	Name	City	Zip Code	Open-Ended Response
1	4782506350	06/08/2016	Alan Wachtel	Palo Alto	94303	The two-lane roundabouts proposed in Alternatives 3 and 5 at the I-280 interchange would impair bicycle access unacceptably along a major route for bicycle traffic. Single-lane, low-speed roundabouts are usually easy for bicyclists to use, and they reduce delay and points of conflict. But that does not hold true for multilane roundabouts. According to the standard reference, the NCHRP publication "Roundabouts: An Informational Guide" (2010), "Single-lane roundabouts are much simpler for cyclists than multilane roundabouts since they do not require cyclists to change lanes to make left turn movements or otherwise select the appropriate lane for their direction of travel. In addition, at single-lane roundabouts, motorists are less likely to cut off cyclists when exiting the roundabout." (Section 2.3.3; repeated in Section 6.8.2) Motorists are simultaneously making the same rapid decisions and lane changes over a short distance. Traffic entering or leaving I-280 at relatively high speed will only exacerbate these lane selection, lane change, and roundabout exiting conflicts between bicyclists and motorists. Furthermore, speed control is more difficult on multilane roundabouts than on single-lane ones, because circulating traffic can cut the corner across lanes. Bike lane access to off-road paths is not a reasonable alternative. Paths are inherently slower than roadways, and the out-of-direction travel and need to wait repeatedly for gaps in vehicular traffic at pedestrian crosswalks will impose substantial delays. A path should always supplement, never replace, bicycle accommodation on the roadway. Alternatives 3 and 5, and any others that include two-lane roundabouts, should therefore be ruled out.
2	4781089660	06/08/2016	John Langbein	Redwood City	94061	I have looked at the five Alternatives proposed for the County's section of Alpine Rd. In general, all the items of Alternative 1 should be implemented. In addition, a formal parking lot for Stanford's Dish trail should be constructed as proposed in the other four Alternatives. Furthermore, parking (and standing) should be made illegal for the County's portion of Alpine. Finally, crosswalks should be installed to service southbound bus stops from Weekend Acres. As someone who cycles Alpine Rd on a near daily basis, I am comfortable with the southbound bike lanes at the intersection of RT 280. The stop sign is critical to my safety. Effectively, it meters the motor vehicle traffic such that when I pass under RT 280, I only need to contend with one or maybe two cars. Likewise, for motorists, with only a couple of cars and maybe a bike, the interchange is low stress and consequently, should be relatively safe. If one of the traffic light Alternatives is constructed, then as a cyclist, I would need to potentially mix with many cars should they decide to move right crossing the bike lane - This would be a significant, negative impact to my safety as a cyclist. As for two-lane roundabouts at RT 280, the plan would be a disaster for cyclists. With roundabouts, the cyclist either uses the bike lane that becomes a sidewalk, or loops through the roundabouts contending with two lanes of cars that are changing lanes to get where they need to go. With the sidewalk option, the cyclist would cross each on and off ramp in a pedestrian crosswalk. In fact, southbound cyclists would need to make four crossings. To have full protection of the law, cyclists would need to dismount - pedestrians have right of way at crosswalks, but not necessarily mounted cyclists. Even by having right-of-way, this is no guarantee that motorists will stop. During rush hour peak, I can envision a long wait for a break in traffic to cross the freeway ramps. Ironically, all of the Alternatives propose lighted crosswalks for Alpine in Ladera because motorists ignore crosswalks - Yet, Alternatives 3 and 5 recommend using crosswalks on freeway ramps which are even more likely to be ignored by motorists anticipating their ride on the "high-speed" freeway. With the roundabout option at RT 280, many cyclists will choose to mix with the motor vehicle traffic as the roundabouts would be the faster route through the interchange area. Whether cyclists will be tolerated by motorists, especially if there is a marked alternative, is open to question. Although the roundabout might be safer to use during periods of heavy congestion which slows traffic, the margin of safety is lost under low-traffic conditions as the motorist can speed through the roundabout by occupying two lanes instead of one. For Ladera, if traffic control is deemed required, I would prefer the roundabout method over the traffic light ASSUMING that the roundabout is designed to keep motor vehicle speed to under 20 mph. Consequently, the bike lane approaches to the roundabout should be redesigned by assuming that the cyclist will traverse the roundabout rather than sidewalk and pedestrian crosswalk. However, as portrayed in the diagrams, the entrances to the roundabouts are flared in a direction which does nothing to slow
3	4780659580	06/07/2016	Emma Shlaes, Silicon Valley Bicycle Coalition	San Jose	95112	My comments are on behalf of Silicon Valley Bicycle Coalition (SVBC), a non-profit with the mission to create a healthy community, environment, and economy through bicycling for people who live, work or plan in San Mateo and Santa Clara Counties. SVBC appreciates the opportunity to work with the County to improve safety for all users along the Alpine Road corridor. In the past, this has resulted in buffered green bike lanes at the Highway (Hwy) 280 interchange, which provide a designated place for bicyclists and tell motorists where to expect them. We have received positive feedback from both cyclists and motorists about these lanes. Considering the five alternatives proposed for Alpine Road, we concur with and recommend all of the modest improvements in Alternative #1. We also like the proposal in the other alternatives to provide a formal parking area for the Stanford Dish trail, and we further recommend adding to these alternatives the elimination of parking along Alpine Road. However, SVBC is concerned that the key features of Alternatives #2-5 would decrease the safety of people on bikes in favor of increasing roadway capacity for motor vehicles. Side paths: We note that several of the alternatives include diagrams showing bicyclists using side paths rather than the road. For most people who bike on the Alpine corridor, this is not preferred: it is contrary to Complete Streets guidelines, it is often unsafe for cyclists to ride in crosswalks, and there are far too many cyclists traveling too fast along the Alpine Road corridor to be accommodated on such paths. For the beginning bicyclist we do, however, suggest that the County put more resources into improving the utility and safety of the existing Alpine Trail. Alpine Road and Highway 280: Currently, at the interchange with Highway 280, the stop sign in the southbound direction is key to the safety of bicyclists. It controls the speed and density of motor vehicles in the potential "conflict" or weave-zone on Alpine under the Highway 280 overpass. Consequently, when examining the proposed alternatives, SVBC favors keeping the stop sign, as proposed in Alternative #1. Using a stop light, as suggested in Alternatives #2 and #4, instead of a stop sign, makes the conflict zone much more challenging for people on bikes: drivers are already at speed (rather than starting from a stop), and there won't be as many breaks between vehicles or bicycles. Motorists will then need to make faster decisions for any lane change needed to reach the southbound Highway 280 onramp, and they won't necessarily take into account the cyclists in the buffered bike lane sandwiched between the travel lanes. It would appear that the traffic light at Alpine and Highway 280 could provide breaks in traffic on Alpine Road, allowing drivers to enter and exit Stanford Weekend Acres from and to Alpine Road. Instead, a traffic light at Piers Lane could provide those breaks. It could be possible to design that traffic light to be triggered by motorists at the three intersections of Alpine Road with Stanford Weekend Acres. The proposals for two-lane roundabouts at Highway 280, in Alternatives #3 and #5, also would decrease safety for bicyclists. The diagrams direct bicyclists to use a side path to
4	4777220176	06/06/2016	Robert Cronin	Menlo Park	94025	Prefer alternative 1 for bicycle safety. If roundabouts are constructed, they should be single lane. Since Alpine is only two lanes on each side of interchange, two-lane roundabouts are unnecessary.

#	ID	Date	Name	City	Zip Code	Open-Ended Response
5	4776921066	06/06/2016	Bonney Ellestad	Menlo Park	94025	Lights are the only traffic control where cyclists and cars most often habitually in most cases follow the traffic rules. I am a cyclist and driver who rides 3+ times a week, at least once a week through this intersection, and am always observing cyclists and "cars" and their regard for traffic control. I have also regularly observed roundabout use by both. I unequivocally observe that cyclists and autos have difficulty coexisting while using them, especially 2 lane roundabouts. Rules for roundabouts are too undefined and leave too much room for personal interpretation and impulse maneuvers. Cyclists and cars need to be told exactly without question when, where, and how to behave in dangerous situations. It is personal behavior and decision making where I see regular danger and risks occurring most often. This 280 intersection and the Page Mill intersections have VERY high, extremely high, auto (commute especially), traffic. Keep it clear and therefore simple with little room for personal decision making. Regulations for safety are imperative!!!! We need to be told what side of the road to ride on!!!! Thank you!
6	4775511522	06/06/2016	Cindy Welton	Menlo Park	94025	This stretch of roadway needs to be made as safe as possible for people traveling by bicycle. Specific infrastructure which clearly delineates space, including buffering and ideally some physical protection from vehicles is necessary as the speed of vehicles is a lethal speed to any vulnerable roadway users. Please refer to NACTO guidelines when re-designing this public asset.
7	4775266955	06/05/2016	Elaine Haight	Palo Alto	94301	I take Alpine Road to visit friends in Portola Valley all the time. It would be great to have a separated bikeway that went under the freeway. Freeway onramps and offramps are hazardous to cyclists, and so we need to make a separated bike path so as not to interfere with the cars. The COW TUNNEL on Stanford land is the perfect place for cyclists and pedestrians to cross 280. Stanford owes it to the community, and it will allow many of their employees to ride their bikes to work safely.
8	4775163828	06/05/2016	dave gildea	menlo park	94025	I ride Alpine once or twice a week as part of the Alpine Portola Sandhill loop. Dish parking lot. I consider the bike lane parked cars as the greatest single hazard along this stretch of Alpine. Over the years I have had several near-crash emergency stops by the Dish parking lot to avoid parked cars or open doors when being overtaken by 40 mph cars. Alpine 280 intersection. I consider that the green lanes / stop signs that we have right now provide a good combination of safety and convenience. Even with infinite funds I see the stop light or roundabout alternatives as going backwards for convenience and safety. Entire loop (Alpine Portola Sandhill). I consider the Sandhill 280 intersection to be an order of magnitude worse as a danger for a cyclist than the Alpine 280 intersection. If we have funds I would much rather see them used to reduce the hazards we have at the Sandhill 280 intersection.
9	4774569752	06/05/2016	Chuck Sholtz	Portola Valley	94028	I frequently ride my bicycle along Alpine Rd., and under 280 on my way to work, home, shopping, etc. I feel that the current setup with the stop signs at 280 and improved green bike lane striping provides the best measure of cyclist safety through this interchange. As I understand the proposals, both the roundabout and stop light alternatives substantially reduce bike safety. The roundabout options are poorly conceived, requiring cyclists to use a side path with its own safety hazards and its inconvenience. Southbound cyclists would need to make up to four crossings of the freeway ramps at pedestrian style crosswalks. The crosswalks don't necessarily contribute to safety as they are often ignored by motorists; especially in semi-rural settings and freeway ramps. The two two-lane roundabouts and the high speed connector between them appear to be unsafe for use by cyclists. With the single-lane roundabout alternatives proposed for Ladera, most cyclists will choose to use the roundabout, rather than the side path and its pedestrian cross walk indicated (on the diagram) for cyclists. It is not clear whether the proposed version of the roundabout addresses the requirement of safely accommodating cyclists. In principle, roundabouts can be built for safety for all users of the roadway. Although the traffic light alternatives for RT 280 are better than the roundabouts, they negatively impact cyclist safety, especially when compared to the current stop sign configuration. The current stop signs allow breaks for cyclists to go through the interchange, especially since vehicles are starting up from a standstill. With a green light, there will be many vehicles densely packed along Alpine and at higher speed, and the margin of safety for all users is reduced, especially if a motorist decides to change lanes crossing the bike lane sandwiched between the two motor vehicle lanes. The simplest alternative called #1 looks good as it does aid in the safety for cyclists by including buffered bike lanes where feasible. In addition, the formalized parking area for the Stanford Dish trail shown in the other proposals is a good idea. Thank you for considering my feedback.
10	4774540240	06/05/2016	Donald Berry	Foster City	94404	The new green lanes around the 280 interchange. I ride through that interchange westbound once or twice a week, haven't ridden it eastbound for quite a while so I'm not familiar with any changes made there. When I've ridden it eastbound before, crossing the entrance to the southbound 280 ramp was a bit tense. The bike lanes in the rest of the section under study are good. For riders on the Peninsula, Alpine is an important route. It connects to Arastradero and Portola which in turn lead to many of the most popular routes in the area. Alpine is in many ways the best route to Portola Valley and Woodside, better than Sand Hill or Woodside. Sand Hill has a lot of lights and the 280 interchange is scary both directions. Woodside is out of the way. But then, I'm sure you've done a study and know how much bike traffic Alpine carries.
11	4774224533	06/04/2016	Robert Page	Redwood City	94061	Alpine Road is heavily used by cyclists as well as motorists. The safety and needs of cyclists must be addressed in any changes and improvements to this critical corridor. Alpine/280 intersection From a cyclist's perspective, the current stop-sign configuration at the 280 interchange works very well (Alternative 1). The stop signs meter the flow of motorized traffic and enable cyclists and motorists to safely navigate weave zones. Signals at the 280 interchange (Alternatives 2 and 4) would replace the current dispersed flow of motorists and cyclists with a concentrated flow and would drastically shorten the weave zone for Sbound cyclists and motorists accessing 280. Currently, only motorists heading N on 280 weave before the stop intersection. With a signal, motorists heading either N or S on 280 will have to cross the path of cyclists in a much shorter distance. This will seriously degrade current safety for cyclists. Is there really a need for a signal S of 280? Wouldn't it cause a lot of unnecessary stops? Replacing the current configuration at the 280 interchange with two 2-lane roundabouts (Alternatives 3 and 5) would reduce the safety for both cyclists and pedestrians by mixing modes of transit on shared paths that cross freeway ramps and would divert peds and cyclists from a direct, short course along the Alpine Road corridor. Experienced cyclists are likely to travel in the motorized lanes through the roundabout. Alpine Access Road intersection All alternatives provide a badly needed, green Sbound bike lane across the Alpine Access road. Currently, for safety, Sbound cyclists treat the right-turn-only lane as a through-lane for cyclists. La Cuesta intersection Alternative 1 should include a green bike lane across the La Cuesta intersection. Alternatives 3 and 5 should include a continuous Nbound bike lane in addition to (or instead of) a mixed use path to reduce bike/ped conflicts.
12	4773641661	06/04/2016	Mike Youngberg	San Bruno	94066	If you use roundabouts, then you need to incorporate bicycle lanes into the roundabout to make the roundabouts safe for cyclists to use. As it is, the existing stop signs and bike lanes are a fairly safe option for cyclists.

#	ID	Date	Name	City	Zip Code	Open-Ended Response
13	4773034133	06/03/2016	Tom Petroski	Foster City	94404	The current setup with the stop signs at RT 280 provides the best measure of cyclist safety through this interchange. Both the roundabout and stop light alternatives substantially reduce bike safety. The roundabout alternatives at RT 280 are poorly conceived, requiring cyclists to use a side path with its own safety hazards and its inconvenience. Southbound cyclists would need to make up to four crossings of the freeway ramps at pedestrian style crosswalks. The crosswalks don't necessarily contribute to safety as they are often ignored by motorists; especially in semi-rural settings and freeway ramps. The two two-lane roundabouts and the high speed connector between them appear to be unsafe for use by cyclists. With the single-lane roundabout alternatives proposed for Ladera, most cyclists will choose to use the roundabout, rather than the side path and its pedestrian cross walk indicated (on the diagram) for cyclists. It is not clear whether the proposed version of the roundabout addresses the requirement of safely accommodating cyclists. In principle, roundabouts can be built for safety for all users of the roadway. Although the traffic light alternatives for RT 280 are better than the roundabouts, they negatively impact cyclist safety, especially when compared to the current stop sign configuration. The current stop signs allow breaks for cyclists to go through the interchange, especially since vehicles are starting up from a standstill. With a green light, there will be many vehicles densely packed along Alpine and at higher speed, and the margin of safety for all users is reduced, especially if a motorist decides to change lanes crossing the bike lane sandwiched between the two motor vehicle lanes. The simplest alternative called #1 looks good as it does aid in the safety for cyclists by including buffered bike lanes where feasible. In addition, the formalized parking area for the Stanford Dish trail shown in the other proposals is a good idea.
14	4772974713	06/03/2016	Bobbie Morrison	San Jose	92125	I encourage you to prioritize bicyclist safety. The only option that looks safe for bikes is Alternative #1. Please give it the utmost consideration.
15	4772970818	06/03/2016	David Ziegler	Palo Alto	94303	The current configuration of the Alpine/280 interchange is much better for bike safety than it once was. The proposed changes, particularly the roundabouts, are much more hazardous and inconvenient for cyclists. The present stop signs allow traffic breaks for cyclists to go through, since vehicles are starting from a stop. The roundabouts require multiple crossing of on/off ramps with vehicles going fast. Roundabout speed limits are routinely ignored. The problem at Ladera is principally due to in and out traffic from the shopping center-- particularly at the La Cuesta end, due to the bend in Alpine just to the East (reduced visibility). It seems to me that roundabouts are ill suited for this sort of situation. I know that residents of the area are distressed at the thought of traffic lights in the country, but they seem more appropriate in the here and now. Expanded left turn and merging lanes make sense. The improved parking at the Dish seems sensible. I'm not sure what the intent is where Alpine approaches Sand Hill/Junipero Serra. Lane widening and improved visibility are generally desirable.
16	4772838124	06/03/2016	Ron Karpel	Belmont	94002	The current setup with the stop signs at RT 280 provides the best measure of cyclist safety through this interchange. Both the roundabout and stop light alternatives substantially reduce bike safety. The roundabout alternatives at RT 280 are poorly conceived, requiring cyclists to use a side path with its own safety hazards and its inconvenience. Southbound cyclists would need to make up to four crossings of the freeway ramps at pedestrian style crosswalks. The crosswalks don't necessarily contribute to safety as they are often ignored by motorists; especially in semi-rural settings and freeway ramps. The two two-lane roundabouts and the high speed connector between them appear to be unsafe for use by cyclists. With the single-lane roundabout alternatives proposed for Ladera, most cyclists will choose to use the roundabout, rather than the side path and its pedestrian cross walk indicated (on the diagram) for cyclists. It is not clear whether the proposed version of the roundabout addresses the requirement of safely accommodating cyclists. In principle, roundabouts can be built for safety for all users of the roadway. Although the traffic light alternatives for RT 280 are better than the roundabouts, they negatively impact cyclist safety, especially when compared to the current stop sign configuration. The current stop signs allow breaks for cyclists to go through the interchange, especially since vehicles are starting up from a standstill. With a green light, there will be many vehicles densely packed along Alpine and at higher speed, and the margin of safety for all users is reduced, especially if a motorist decides to change lanes crossing the bike lane sandwiched between the two motor vehicle lanes. The simplest alternative called #1 looks good as it does aid in the safety for cyclists by including buffered bike lanes where feasible. In addition, the formalized parking area for the Stanford Dish trail shown in the other proposals is a good idea.
17	4769340145	06/02/2016	Justin Kennedy	Menlo Park	94025	Making a left from Bishop to Alpine at 8:00 am can take 5-10 minutes and completely depend upon the kindness of other drivers (rare) or require very aggressive pulling into traffic and crossing fingers that the other cars will slow enough to allow the turn. A real center lane would help to break the left turn into two parts rather than all in one. A real center lane would not solve the craziness of the situation but it would likely help. I fear the roundabouts at 280 will not provide sufficient gaps in the traffic to allow vehicles on side streets access to Alpine. Perhaps signal lights. With no right turn on red. And having the lights timed to create gaps in traffic. Could you connect Bishop and Wildwood? If so, could a signal light then be installed that would provide both side streets with access to Alpine?
18	4757536720	06/08/2016	Karen Davis	Redwood City	94061	I have cycled the Alpine Road corridor several times a week for almost 30 years, and occasionally drive it as well. I like the numerous minor suggestions in the first alternative: for the road and the path. In the other alternatives I also like the parking for the Stanford Hills trail. Regarding the alternative with single-lane roundabouts in Ladera: they could work for cyclists if the roundabouts are designed accordingly. Most experienced cyclists will use the roundabout rather than the mixed-used path, which has pedestrians, often walking side-by-side, and often with dogs or strollers. However, many drivers are not aware that cyclists have the legal right to use the road even if there is a side path, so if they see that cyclists are directed to the path, the drivers could rage at the cyclists on the road. Including sharrows in the roundabout might help. The four alternatives with stop lights or roundabouts at the intersection of Alpine Road with Interstate 280 would be hazardous for cyclists. The current buffered green bike lanes show motorists that cyclists will be on the road and where, and the stop signs reduce speeds of motorists and introduce breaks for them to cross over the bike lane without mowing down the cyclists in the bike lane. The dual-lane roundabouts would be disastrous for cyclists: too much lane-changing going on in the road. Mixed-use side paths have their own hazards: conflicts with other users, conflicts with motorists at intersections. It is not clear to me what problem the roundabouts at the intersection of Alpine Road and Interstate 280 would solve. I can see that stoplights at the interchange could create much-needed breaks in traffic in Weekend Acres for residents to get to and from their homes, but again, by doing so, they would eliminate the breaks in traffic that cyclists need to negotiate the Alpine / 280 interchange; so the improvement in safety for the residents comes at the expense of the safety of cyclists. It would be better to put stoplights in the Weekend Acres area itself rather than at Interstate 280.

#	ID	Date	Name	City	Zip Code	Open-Ended Response
19	4757399946	05/27/2016	Rick Voreck	Portola Valley	94028	- The meeting was MUCH to short for the amount and complexity of information that you were trying to convey to the community. - It would have been much better to at least send out a flyer with links to the critical sites so that people could review the information in advance. - Below is a letter I am sending to the County officials. You should read it too. ===== Dear Honorable San Mateo County Supervisors, Managers and Directors, First, I want to thank you for your attention to the dangerous traffic situation on Alpine Rd. My family and I are personally impacted by this every day. I plan to take time off work to meet with Mike McCallagy on Friday June 10, and look forward to discussing these important issues with you in person then. I want to state that I think that we need traffic signals on Alpine Rd. The LEFT TURN coming out of Piers Lane onto Alpine Rd South bound is hazardous and of particular concern to me: I was surprised but gratified to learn in the May 9 community outreach meeting at Woodland School to learn that Piers Lane/SLAC and Alpine intersection met the requirements for a signal light. I think that a traffic signal should be placed at Alpine Rd and Piers Lane. I realize that it may encourage SLAC extra traffic at the intersection, but am willing to live with that. Since we live at the corner of Piers Lane and Alpine, and my wife and I have to risk our lives every day to make that dangerous left turn. Daily, there are a lot of hikers for the Alpine Entrance of the Big Dish trail that are obliged to take that risk too. I have personally been hit by a southbound driver who was not paying attention, fortunately, not too serious. Our son is just about to get a driver's license, and we worry a lot about him trying to make that left turn as well. A big problem is that north bound Alpine traffic leaving the 280 interchange (still dreaming about going 70 MPH on 280) are just accelerating into what looks like a wide bridge and wide 2 lane road and have just enough time to reach about 50 MPH when they encounter this intersection. Because they are rounding a bend toward the east, they cannot see the Piers Lane intersection, nor can the Piers Lane cross traffic see the oncoming North Bound Traffic until about 100 yards from the intersection. So it is almost a blind intersection. Visibility for south bound Alpine traffic is similarly restricted. Another problem: Frequently, I find myself facing traffic coming from the SLAC rear entrance or the horse ranch (Also Known as Ansel Lane) as well. This is a problem since the slight offset in opposing lane centerlines does not allow simultaneous Left turns without major risk of a head on collision. My necessary workaround: Although this is probably not legal, I frequently use the left turn lane for the Alpine Rd North bound traffic (going into SLAC or horse ranch) as a safety zone so I can get across the north bound lane of traffic during a typically small gap in a continuous flow, then wait for a gap in the south bound traffic. This intersection should also have a "DO NOT BLOCK" Zone to allow Piers Lane and Ansel Lane traffic a chance to get onto Alpine Road when the traffic is stopped, as it so frequently is. This intersection would be nice if Southbound traffic into PV on Alpine Road could bypass Stanford traffic heading to 280 (e.g., a lane that cannot get to 280). It would be nice Northbound, too (e.g. restricting the merge to a single lane whereas now 280 exits cross a lane to get to the left Northbound lane while simultaneously others occupy the right lane. Need to keep pressure on Stanford to reduce the number of people commuting to campus. If the commute becomes onerous, this will prompt additional investment in the alternatives to which I suspect they have already committed.
20	4749299613	05/24/2016	DC Plough	Portola Valley	94028	It appears (from the powerpoint presentation) that accidents at I280/alpine have decreased in 2015, and I would assume this is due to the texture dots and larger stop signs. As a resident of Portola Valley, with a child approaching driving age, it is deeply concerning that despite these improvements, I continue to note cars running the stop sign very frequently. Clearly these improvements are not good enough. When I lived in Menlo Park, I bicycle commuted to Stanford for years. After my move to Portola, I have not used my bike, not just because of the hills, but because I feel it is just too dangerous to bike across the 280 intersection area. My comment here is just to emphasize that the residents of this area consider road safety improvements to be a very high priority. Although I watched the videos posted to Youtube, they were of zero value to me, as there was no sound, nor was there any accompanying text of any kind. I read the powerpoint presentation, and I find the prospect of roundabout modifications to be potentially appealing, as they will slow traffic. I have concern whether roundabouts would delay or impede access for emergency vehicles. With the only access to Portola Valley being Alpine or Portola road, I am concerned about the ability to provide emergency services not just in medical emergencies, but following an earthquake, or fire.
21	4749287075	05/24/2016	Juliette Faraco	Portola Valley	94028	I Support the following: Do not block zones at intersections Better trail maintenance WITHOUT extensive "improvements" Fix rough portions, fix lighting at underpass. Widen only where extensive mature tree removal is not required. "Smarten" signal at Junipero Serra and Sand Hill roads. Allow southbound Alpine traffic to go when left turn from Junipero Serra is red, i.e. no conflict situation. Wildwood Access Consolidation Lit crosswalks (RFBs) Crosswalk to bus stop on west side of Alpine. Trail extension to Stowe Dish Trail Parking with assurance that trail users are safe, Prefer pervious surface material to impound water. Improve trail crossings of ramps. Prefer roundabouts to signals where there is adequate right of way. Prefer Alternative 5 Wider bike lanes with buffers Reduced speed limit I request that the next meeting to be lead by a more accommodating person.
22	4746103185	05/22/2016	Charlie Martin	Menlo Park	94025	1.) Please provide access to results and comments to date to SWA and PV survey takers. 2.) Take a more holistic approach to the problems facing SWA in order to address traffic issues effectively by consulting with other effected neighboring communities such as Stanford, Palo Alto, Menlo Park, etc. 3.) Give more time to participants to consider impact and ramifications of proposed solution. Then provide more time for Q and A at the end of any presentation. 4.) Take into account the synergistic multiplier effect of Q and A sessions (the fact that questions and concerns raised at meetings engender more questions and concerns which should be addressed during those meetings). 5.) Don't mix apples and oranges! Holding a meeting with two communities that have conflicting interests and don't care very much for and about each other is going to create problems. Doh! 6.) Please do your homework. Spend enough time in the study target community to see what inhabitants are really faces with. A couple of "drive throughs" won't give you that information. 7.) Use latest available technology to capture a wider range of data that would provides a better overview of what really goes on the Alpine Road corridor. 8.) Review the reams of emails and documentation at the county provided by SWA residents that have complained about these SAME issues for DECADES! 9.) Verify relevance and timeliness of information about existing conditions to prevent faux pas such as proposing expansion of a bus stop opposite Wildwood that no longer even exists (and which the county has known about for years). 10.) Forget about "Round-A-Bouts" at 280. They are patently unsafe for pedestrians and especially for bicyclists. Also, how the devil do double semis and moving trucks negotiate these monstrosities? (They don't like them in Europe either!) 11.) Btw, I was expecting a questionnaire with additional fields for comments. So, what is it you really wanted to know? There is no way to tell.
23	4745101062	05/21/2016	Gunter Steffen	Menlo Park	94025	I hope that you can devise a way for traffic to move smoothly without the addition of traffic lights in Portola Valley/Ladera, as these would change the rural/suburban nature of our towns.
24	4744379265	05/21/2016	Joanne Donsky	Portola Valley	94028	Roundabouts and separate bike trail would be our preferences
25	4742613081	05/20/2016	Taylor Hinshaw	Portola Valley	94028	Please do not let cost be the determining factor for which alternative is pursued. Safety and travel delay are the primary issues that must be resolved.
26	4741329279	05/19/2016	Onnolee Trapp	Portola Valley	94028	

#	ID	Date	Name	City	Zip Code	Open-Ended Response
27	4741314917	05/19/2016	Richard Zeren	Portola Valley	94028	During morning and evening rush hour, Alpine Rd is nothing more than an elongated exit/entrance ramp for 280. In the morning, it's mostly people going to work in Menlo Park or Palo Alto--the right hand turn traffic onto Junipero Serra toward Stanford is much lighter than the through traffic into Palo Alto/Menlo Park. Those cities' developments have an outside impact on a narrow, twisty, two lane road. The traffic study needs to track the vehicles further to determine the root causes. The County and CalTrans should do everything they can to discourage alpine as a ramp.
28	4741244402	05/19/2016	Angela Hey	Portola Valley	94028	I like roundabouts better than traffic lights and think they could be filled with poppies and wildflowers to make them look attractive. I'd like a decent bicycle path for novices to go to the Stanford Campus from Portola Valley - so I can take folk who are scared of riding on the road for bike trips.
29	4741221496	05/19/2016	Virginia Bacon	Portola Valley	94028	The videos show that most of the auto traffic problems relate to 280 access from the Stanford and other flat land areas. The increased traffic is related to massive development in these areas. To solve this traffic problem a new access to 280 needs to be created. The best solution would be something that connects through Stanford lands. There are several possibilities, which should be studied in greater detail.
30	4738813753	05/19/2016	Jonathan Blum	Sunnyvale, CA	94087	Thank you for this opportunity. I support the residents asking for improvements. As a cyclist who frequently uses Alpine Road, I would advise strongly against traffic circles at the 280 interchange. Cars entering and exiting the highway will be traveling at speeds incompatible with cyclists. The proposed crosswalks will be overly dangerous, and the delays involved in using them will encourage cyclists to enter the circle, where they will basically be bowing pins. Cyclists in the circle will be subject to being struck by cars making the "right hook" maneuver, as drivers will be focusing on getting on or off the highway, not on looking for cyclists. Drivers in California have no idea what to do in a two-lane circle; I have seen many close calls in the traffic circle at Kaiser Santa Clara as drivers in the left lane turned right, and that's at 10 MPH. I am used to riding in traffic (in Boston, yet), and have a lot of experience with traffic circles, but they still make me very nervous. Even when they are not at highway exits, they are very unsafe for cyclists. A conventional intersection would be much safer.
31	4738499470	05/19/2016	David L Cohrs	Emerald Hills	94062	I am an avid cyclist and use Alpine Road frequently. I feel that a 2-lane roundabout is not cycling friendly at all. To be cycling friendly, you need a route that is both safe for cyclists and allows cyclists to use it without acting like pedestrians. Please look to Holland or Belgium for inspiration. This is not a good plan.
32	4735051024	05/18/2016	Kevin Stube	Santa Clara	95051	I ride this route quite often on my bike. Sometimes on my own after work to make a long commute from Mountain View to Santa Clara or with a small group at lunch or in a medium group on Sunday. The intersection of 280 and Alpine is fine as is right now. Please don't change it. These multi lane roundabouts are going to be so confusing to cars. I've been to Europe about 20 times and they understand roundabouts. American's don't because they just are not use to them. Even in Massachusetts and New England where they have some, people are still confused. As a cyclist, I see no need for it and as a driver I see no need either. When I have driven through this area, I rarely see more than 2 or 3 cars at a stop sign waiting to go.
33	4733404712	05/17/2016	Fletcher Johnson	Redwood City	94061	Hello-while I don't live in the specific community, I often ride my bike there as I live right off Alameda De Las Pulgas (and grew up in Woodside.) My observation is that bike/pedestrian paths are great, but are limited to cyclists who are occasional riders. Many serious riders (such as myself) travel much too fast for a typical pedestrian/bike path and will want to stay on the road. My only thought is that, in the planning, when considering effects on cyclists, that both types of cyclists be considered. There is nothing worse than spending lots of money to improve something when the majority of people won't use it - especially when the same money might create a significant improvement applies slightly differently. I also feel that anything that impedes emergency services should be a last resort. I think that basic road widening in some places is adequate. I like the idea to make wildwood Ln have 1 exit (and add a pedestrian crossing with warning lights). I also think that timing the lights at Sand hill with the lights at Foothill will help. I have seen many times where the inconsistent timing has appeared to create a significant backup on Alpine towards Sand Hill. I may be wrong, but it has always seemed to me that the significant backup is on Alpine heading towards Sand Hill - but that could be the time of day I ride. For the north bound 280 traffic, adding a right turn lane to Alpine that starts right after Alpine creek may help with some of the traffic as currently they either drive in the bike lane or have to wait in line till they are almost to 280. It would be helpful to know the cause of the 11 bike related accidents - were they due to cyclists wearing hard to see clothes, riding dangerously, or to drivers not paying attention. This may help factor in options related to bike improvements. Regarding bike/pedestrian paths - they do exist, but even for the occasional cyclists, could be better marked and maintained. I encourage you to ride a bike on the bike path from Stowe Lane to Sand Hill Road (but be careful going under Foothill - it's very dangerous). Between those hazards and poor signage, most people just stay on the road. Anyway, just a few more thoughts on the topic.
34	4733239277	05/17/2016	Peter Lenhardt	Menlo Park	94025	I'm a cyclist. Since this is partially a project for mitigating traffic problems and partially to improve safety, I'm looking out for the safety of the _most vulnerable_ group on the roadway. I trust the County is doing the same.
35	4732875369	05/17/2016	Fumi Matsumoto	Cupertino	95014	I don't like the roundabouts suggested on Alpine Road. Mixing cyclists and motorists in a multi-lane traffic circle in CA is asking for injury/death.
36	4731783010	05/17/2016	Ron Miller	menlo park	94025	I will provide a comment after seeing the project proposals.
37	4730998731	05/16/2016	Ed Roseboom	Palo Alto	94303	As a bicyclist I would like to see improvements for cars exiting La Cuesta towards 280. It seems like many cars need to pull into the path that bicycles take on Alpine to gain adequate visibility for making their turn. At a minimum better marking to delineate the bicycle path on Alpine would be appreciated.
38	4728900311	05/16/2016	steve schmidt	Menlo Park	94025	Traffic signals at the 280/Alpine intersection would increase danger to cyclists and not help Weekend Acres/Stowe Lane residents access to s/b Alpine. Traffic actuated signals at both Stowe and Bishop Lane would solve the local access problem. No changes to bicycle infrastructure is needed. Thanks! Steve Schmidt
39	4728057294	05/15/2016	Zoe Hoster	Palo Alto	94301	I ride my bike regularly on Alpine Rd for commuting and for recreation. I'm glad there is this initiative to make it safer for cyclists. Please separate bicycles from cars as much as possible, especially when crossing 280. Crossing 280 on Alpine on a bike currently feels very dangerous.
40	4727831950	05/14/2016	Liz Fowler	Portola valley	94028	It is very important to have safe biking/walking from Ladera to Stanford.
41	4721171335	05/11/2016	Don Coleman	Portola Valley	94028	Traffic circles are a great idea and balance the need for increased throughput with the rural character of the neighborhood. Safe access for bikes and pedestrians to / from Menlo Park / Portola Valley is a key priority.
42	4721028647	05/11/2016	Jonathan Shipman	Portola Valley	94028	Priority should be to best protect those who are at the highest risk / least protected. I see support of safe and efficient paths for bicyclists and pedestrians as priority #1. We should avoid adding more congestion via stoplights, and at most consider roundabouts if necessary.
43	4720955468	05/11/2016	Andy Pflaum	Portola Valley	94028	Have lived in Ladera and elsewhere along Alpine Road since 1998
44	4720916753	05/11/2016	Jen Coleman	Portola Valley	94028	I have attended both community meetings this year, and feel Stanford Weekend Acres residents, and generally folk over 55 years old are over-represented at these meetings. Not many young parents can attend these meetings because they are held during dinner/bedtime for their kids. I am trying to get more of my peers to attend but it is difficult.
45	4720849662	05/11/2016	Matt Garlinghouse	Portola Valley	94028	Please consider the impacts of metering lights on I-280. Also, consider allocating the costs of the project to where the needs for the project originate.

#	ID	Date	Name	City	Zip Code	Open-Ended Response
46	4718901780	05/15/2016	Susie Cohen & Barry Weingast	Menlo Park	94025	<p>We have four reactions to the study and proposals about the Alpine Road Corridor between Santa Cruz Ave and 280.</p> <p>(1) The principal problem with the study and its proposals is that they were unable to study Sand Hill Rd, especially the intersection between Alpine Road/ Junipero Serra/ Santa Cruz Ave. The study appears to have held constant the number of cars traveling on Alpine Rd. It concluded that adding a signal or a roundabout at 280 would increase the flow and thus decrease the wait time along Alpine from Junipero Serra to 280. This conclusion is ridiculous because it ignores the changes in behavior of drivers who currently use Sand Hill to get to 280. If you make Alpine faster, more cars bound for 280 will drive up Alpine instead of Sand Hill. This will increase the volume of traffic on Alpine in ways unanticipated by the report. Given the inattention to the divergence of 280 bound traffic onto Alpine, the proposed changes at 280 (a signal or roundabout) will have unforeseen consequences. The solution could therefore be much worse than the problem. This problem of unforeseen consequences could have been avoided had the study included estimates of the change in behavior of 280 bound cars currently using Sand Hill.</p> <p>(2) The illustrations showed a bus stop on the west side of Alpine Road across from Wildwood Lane. I believe this bus stop was shut down by the CHP because it is unsafe. No parent will let their kid get off at that stop and cross Alpine Road. It is absolutely unsafe, and it is not obvious that it could be made safe without a traffic signal.</p> <p>(3) Although we have opposed adding a third lane for Alpine at Wildwood, we have reluctantly come to believe it necessary. The volume of traffic has made this solution necessary. (We were recently rear-ended and our car totaled while waiting to turn left onto the Alpine frontage road at Wildwood.</p> <p>(4) We're not sure if closing off the entrance/exits at Alpine Road (and extending Wildwood to Alpine) is a good idea or not. It would change the nature of our street for this of us living on Alpine and on the frontage road. Unfortunately, we're not sure if there is another solution.</p>
47	4718809301	05/11/2016	Esther Dicks	Menlo Park	94025	<p>I think your plans to make Alpine safer by adding a middle lane and slowing down traffic are very much needed. I also believe the plan to close off the two ends at Wildwood and open it in the middle would make it so much safer. I have seen too many accidents due to the poor visibility, particularly at the southern end and I believe that end should be closed in all instances.</p>
48	4717367145	05/10/2016	Steve Johnson	Ladera	94028	<p>Follow-ups to last night's meeting, in order of importance:</p> <ol style="list-style-type: none"> <li>1. Alpine speed control is essential. In addition to 35 MPH limits everywhere, I suggest that you put a flashing MPH feedback sign and Botts Bumps rumble strip on southbound Alpine just past the road to Webb Ranch south of 280. Most drivers really speed up there heading south from 280, creating a huge challenge trying to turn left from La Cuesta. A flashing sign and bumps on the northbound side of Alpine at the PV border also would be a useful reminder that cross traffic is ahead. Also note that speed limits won't work unless enforced. In my 39 years in Ladera, I NEVER have seen a Sheriff pull over a speeder at rush hours, or even patrol Alpine at those hours.</li> <li>2. IMO, lights, or worse traffic circles, at La Cuesta and/or La Mesa would be killing flies with sledgehammers. Turning left onto Alpine is only a real problem from 7:30 to 8:30 AM M to F. And that could be significantly improved by lower speeds, and by drivers using the merge/turn lanes on Alpine. It also would help to mark the access to the turn lanes with arrows at the beginning of the lanes to visually emphasize that they are available. Anyone who thinks that circles will make left turns easy is naive, esp. given the high volumes and speeds of traffic on Alpine. Circles work well in the right places--these are not among them. And lights would invite jumping and running reds by drivers in a hurry, making things less safe.</li> <li>3. I definitely favor lower speeds and speed signs with bumps, better lane markings, wider bike lanes where feasible, pedestrian crossing lights, better parking at Piers--in short, the minimalist approach. Major surgery on Alpine is neither indicated nor a responsible use of County funds.</li> </ol>

# **ALPINE ROAD CORRIDOR STUDY PROJECT MEETING**

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Summary of Community Meeting  
Tuesday November 1, 2016

The San Mateo County Public Works Department hosted a community meeting on Tuesday November 1<sup>st</sup>, 2016, from 7:00-11:00 p.m. to discuss potential improvements along the Alpine Road corridor in the vicinity of Interstate 280 (between south of La Mesa Drive and north of Stowe Lane). The meeting was held at the Woodland School, 360 Le Cuesta Drive in Portola Valley. Over 80 community members attended the meeting.

County staff Joe LoCoco, Deputy Director Road Services; Diana Shu, Road Operations Manager; and Hanieh Houshmandi, Associate Civil Engineer attended the meeting. Adam Dankberg, Kimley-Horn Project Manager; Daniel Carley, Kimley-Horn Traffic Engineer; and Eileen Goodwin, Apex Strategies, Community Outreach lead, represented the project team. Supervisor Don Horsley; Mike Callagy, Assistant County Manager; and Jim Porter, County Public Works Director were also in attendance. There were representatives from the California Highway Patrol (CHP), Town of Portola Valley, City of Menlo Park and Ladera Fire Districts and Stanford University at the meeting.

This was the third meeting with the community since the beginning of the Alpine Road Corridor Study project. An earlier meeting with County staff was held in February 2015 to capture input relevant to the scope set out for this project team. This current Study effort and Project Team hosted its first community meeting in January 2016 and the second community meeting in May 2016. The purpose of the first community meeting was to obtain input from the community on the types of improvements needed and corridor priorities. The second meeting debuted project improvement alternatives and took feedback on those ideas and concepts. The third meeting was held to present refinements made to the project improvements and to obtain community feedback and input on prioritization of the potential projects.

Approximately half of the attendees indicated they attended the January 2016 meeting and two-thirds of the attendees indicated they had attended the May meeting. The highest number of attendees indicated that the email notification from the County staff was how they heard about the meeting, with other popular notifications including the mailed flyer and neighborhood group email.

The following summary of the meeting was prepared by Eileen Goodwin, Apex Strategies, who facilitated and documented the meeting.

## Meeting Summary

The meeting started at 7:00 p.m. In addition to project personnel in attendance to answer questions and present information, over seventy-five (75) members of the public attended.

After a brief introduction by the County's Deputy Director Road Services, the Kimley Horn Project Manager spoke to a PowerPoint presentation. The presentation oriented attendees to the purpose of the project, reviewed previous community feedback, and presented proposed project improvements. At the end of the PowerPoint presentation, the Kimley Horn Project Manager presented the process and a schedule of next steps. During and after the presentation, attendees offered many questions, suggestions and opinions, to the project team. The comments and responses offered during the meeting are captured below in the order they were given.

The meeting format also included 40 minutes of time for attendees to give additional input at tables by prioritizing the improvement projects. Projects were assigned to Phase 1 or Phase 2, with each phase ranked separately. Phase 1 projects are improvements that could be implemented relatively quickly for a lower cost. Phase 2 projects are improvements that would need coordination from Caltrans and other parties, environmental clearance and/or large construction budgets. Each table was given report card style sheets to rank their choices, maps to annotate additional feedback, and a "cheat sheet" summary of each of the improvements.

The prioritization score provided by each table was then consolidated onto a summary board that showed the rankings from each table. This input has been captured in photos and text in this meeting summary.

The facilitator re-convened the attendees to discuss the themes evident from the feedback at the individual tables. Certain projects seemed to be consistency popular, while others were popular at some tables and not popular at others. Individuals were asked to elaborate on their table's rankings and observations. This discussion lasted approximately 30 minutes.

Towards the end of the meeting, the project team collected comment and question cards that were filled out by attendees during the course of the evening. The Deputy Director Road Services and his team gathered the cards and categorized the questions and themes. With the permission of the audience, these themes and questions were addressed by the Kimley Horn project manager over the next hour in lieu of reading all the questions directly from the cards. The comment cards submitted are available on the website at <http://publicworks.smcgov.org/alpine-road-traffic-corridor-study>.

The meeting adjourned at approximately 10:45 p.m. with staff staying until 11:00 p.m. to answer final questions and clean up.

## Questions and Comments Received During the PowerPoint

Comments and questions received during the course of the PowerPoint presentation:

Comment/Question	Response
What time of day, where and when were the traffic counts and speed study taken.	The speed study was conducted mid-day during the school year at around this time last year. <i>[Ed. note: All counts and speed surveys were taken in late October/early November 2015].</i> Data was collected throughout the study area from south of La Mesa Drive to north of Stowe Lane.
Does the flashing light pedestrian crossing ( <i>Ed. note: rapid rectangular flashing beacon</i> ) include the flashing lights in the road?	No. This style with the lights on sign posts on either side of the road is more effective with drivers and easier to maintain. The in-road flashing lights get dirty and become less visible over time.
Will creek project be simultaneous with these projects?	No. The trail project is ahead of the projects on Alpine Road. It will go to construction in 2017.
The hatched area that is the bike buffer, is it a no man's land?	Yes. No car or bike is allowed to travel in the buffer area.
Are buffered bike lanes enforceable?	Yes.
Would the guardrail improvements include path improvements?	No.
Are you coordinating with the people designing the paths?	Yes.
Can the barrier that is there also be improved there are nails sticking out and that is unsafe.	We can look into including improvements to the existing barrier with the barrier extension project.
On the Alpine Trail the shrubs need to be trimmed.	County staff will review.
With the gating of the Shell	Vehicles would use the gas station driveway off of

<p>driveway, how would vehicles access the station?</p>	<p>La Cuesta which allows turns to/from both directions of La Cuesta. Or would access the Shell station from other driveways in the shopping center.</p>
<p>Can semis use a roundabout?</p>	<p>Yes. There is an apron that is designed to accommodate trucks.</p>
<p>Do roundabouts cost \$18m each?</p>	<p>No, they usually cost much less than that.</p>
<p>Have you done traffic modeling of the roundabouts?</p>	<p>Yes. Traffic analysis including the roundabouts was presented at the May Community meeting. The La Mesa and La Cuesta roundabouts worked well from a traffic analysis perspective. You can find the simulation videos and model results online at the project webpage.</p>
<p>Will there be “sharrows” in the roundabout?</p>	<p>Sharrows are not allowed to be marked in the roundabout. Signage will direct vehicles and bicycles. Sharrows are markings on the roadway that emphasize that bicyclists are allowed to use the lane.</p>
<p>Will traffic back-up onto 280 when the free off-ramps are converted to signals?</p>	<p>We performed traffic simulations of the improvements. The model did not show any backups onto I-280 from the improvement. The improvements will be coordinated with Caltrans to ensure that there will be no impacts to the freeway.</p>
<p>How will Ladera people drive through the interchange?</p>	<p>There would be a traffic signal that provide a signal phase to stop freeway off-ramp traffic and allow Ladera drivers to continue on Alpine Road.</p>
<p>Can you have a roundabout at an off ramp?</p>	<p>Yes, there are a few examples of roundabouts at freeway off-ramps in California. Traffic analysis at this location indicated that the existing free movement to northbound Alpine for the northbound off-ramp would be need to maintained. That movement would not be part of the roundabout.</p>
<p>Will there be a gap at Wildwood with the design proposal?</p>	<p>The analysis shows that Wildwood would get gaps of at least 6 to 7 seconds regularly throughout peak times with signalization. That</p>

	would be adequate to allow for turns onto Alpine.
For your cost comparison on the lights are you looking at one light or all of the lights?	Both freeway ramp signals are included in the cost estimate provided in the PowerPoint
For parking at the Dish, 12 stalls are not nearly enough.	Yes, we understand that. The 12 stalls are what fit safely in the available right-of-way. Future discussion with Stanford may be required.
Are the Dish parking spaces required?	No, there is no requirement.
How many people typically park at the Dish today?	The number of cars that can fit depends on how efficiently cars park. It also varies by time of day. Our observations indicate that at peak times there may be about 20 to 25 cars parked at Piers Lane. Additional cars may park at Bishop Lane or other nearby streets.
Can the empty land near there be used for parking?	The land we think you are referring to is not in County control. This is the type of feedback we would like you to provide at the tables.
What "problem" does the parking lot solve?	The existing parking patterns are not safe. Vehicles often stick out into the bike lane, interfere with the Trail, or make unsafe maneuvers. A parking lot would make the parking more formal and avoid impacts to the bike lane.
Have studies been done about the dangerous aspects of Alpine?	Yes, collision history has been researched and was utilized in identifying improvements.
Who controls the right-of-way on the other side of Piers --- Stanford?	Yes, Stanford is in control of the right-of-way you are referring to. The Study Team has been coordinating with Stanford. There will need to be additional coordination with them.
Is the proposed parking lot bigger than the area used today?	No.
Can something be done for the left hand turn out of Piers onto Alpine?	Right-of-way is very constrained in this area. An acceleration lane at Piers is not currently included in the improvements.

Would the ATT facility need to be moved to consolidate the driveways at Wildwood?	Yes.
Were studies done about the option of a signal at Wildwood? We get 10 minute delays.	Yes, there were studies done and the intersection does not warrant a signal due to the traffic volumes being far too low. We have also observed the very long delays.
Could there be a stop sign placed on Alpine Road to help the Wildwood people?	No, there is too much traffic on Alpine Road for a stop sign at Wildwood.
There are stop signs and signals on Page Mill and other traffic impediments such as speed bumps on Campus Drive West which is why Alpine Road is becoming an alternate route. We need to slow traffic on Alpine Road to be less attractive.	The Project Team is not familiar with the process used to implement the specific examples mentioned. The project includes lowering the speed limit on Alpine Road. <i>[Ed. note: the stop sign on Page Mill is west of I-280 where through traffic volumes are much lower than experienced on Alpine and Santa Clara County has a project to replace the stop sign with a signal or roundabout]</i>
Will the bike lane be reduced to make the Wildwood center merge lane? Where will the land be taken from to fit in the center turn lane?	No, the bike lane won't be reduced. The additional land will come from the west side of the street.
Who is responsible for the fence that is down near Stowe Lane?	The fence is in Menlo Park right-of-way. They are aware of the fence situation.
I question whether these center turn lanes are safe. I think drivers will use them as passing lanes to get around slower vehicles. These center lanes are also dangerous for bikes.	Comment noted. Studies have shown that center turn lanes are effective and safe. The suggested behavior is generally not found to occur commonly.
Are the trail improvements north of Stowe on County right of way?	Yes.
Does a widening encourage	No travel lanes will be added. The widening will

speeding?	be limited to a few feet and should not have a significant effect on speeds. The placement of a speed feedback sign and lowered speed limit should help reduce speeds.
More stops are desirable to push traffic back to Page Mill.	Comment noted.
What studies have been done about signal warrants. Did pedestrian and bicycle counts play a role?	Signal warrants were performed at all locations. Yes, there are warrants for pedestrian traffic, as well as the number of collisions. These warrants were checked as well. The three SWA intersections do not meet any signal warrants.
Can exceptions be made? Can warrants be "bent?"	Warrants are specific, quantitative requirements established at the state level. Not following warrant requirements introduces liability and funding issues for the County.
Alpine Road gets Sand Hill diversion. Is there collaboration regarding Interstate 280?	Yes, there is collaboration, but I-280 responsibility ultimately lies with Caltrans. Ramp metering would be Caltrans decision and that is outside this project. Caltrans, the County and Menlo Park do meet and coordinate regarding operational issues.
We want traffic to go slower.	Comment noted. The project includes measures such as lower speed limits and speed feedback signs to reduce speeds on Alpine.
It doesn't seem realistic that the Piers signal would only be triggered every 15-20 minutes.	Northbound Alpine Road traffic (towards Menlo Park) would only be stopped by vehicles turning left out of SLAC or Piers Lane, or turning from southbound Alpine to Piers Lane. Traffic turning from either direction on Alpine to SLAC, which is the heaviest turning movement at this location, would not stop northbound Alpine Road traffic (traffic headed to SWA intersections).
Providing formalized car parking at the Dish Trail could increase use of a Piers signal.	Yes.
Concern about the warrants. Residents want our	Improving the corridor for residents is the study's focus. We are also trying to improve safety for all

concerns addressed not people who come from out of the area to use the Dish hiking trail.	users of the roadway. The County needs to follow engineering and safety standards. We also can't significantly increase congestion on the roadway. It is a balance.
Will the 35 mph speed limit be posted with white signs?	Yes.
Can't we just place a lot of 25 mph white signs?	White signs with an arbitrary speed limit are not enforceable. There needs to be a speed survey, as previously described, to establish an appropriate speed limit and to make a speed limit enforceable.
We have had accidents, more than enough to warrant a 25 mph speed limit. We have a million extraordinary circumstances.	The California Vehicle Code has specific standards regarding the setting of speed limits. The County has examined those standards and determined that 35 mph is as low a speed limit as can be enforceable.
Has your study looked at restricting construction trucks from Menlo Park, Atherton and other construction sites? I think you have not addressed that.	The County is not able to effectively restrict truck traffic on this roadway.
How did you get feedback regarding Ladera signals not being desired?	That feedback was gathered from those who attended the May community meeting and provided follow-up feedback on the online survey. If the community instead prefers a traffic signal, there is no reason that it could not be considered.
Would the interchange funding come from Caltrans?	Not likely. The State does not have funding at this time. Funding for an improvement at the interchange is likely to come from local sales tax funding or other county controlled finding.
When will the trail work start?	Summer 2017
What about treating each ramp separately in terms of roundabout or signal? What about a signal to enter the roundabout like they do in	It is not recommended to have one ramp be a traffic signal and one be a roundabout due to the possibility of queuing from one impacting the other. However, it may be feasible to have the southbound ramps remain unsignalized and

the United Kingdom?	implement an improvement at the northbound ramps. The concept of a light prior to the roundabout is not typically utilized in the United States and is not recommended at this location because drivers would not be familiar with such an operation.
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## Priorities Provided During Table Exercise

### Phase 1:

Letter	Improvement	Table									
		1	2	3	4 <sup>1</sup>	5 <sup>1</sup>	6	7	8	9	10 <sup>1</sup>
A	Enhance/shift crosswalk south of La Mesa Drive		11				9	3	9	8	
B	Install speed feedback signs in Ladera Area (2 locations)	1	10	4			7	3	3	3	
C	Install lighting and RRFBs at crosswalks at La Mesa Drive and at La Cuesta Drive	1	5	1			8	2	1	2	
D	General path widening (Ladera Area)	1	3				11	6	11	7	
E	Bike slots at intersections and green paint in conflict areas (Ladera Area)	1	6	2			10	11	7	8	
F	Bike lane buffer extension to Piers Lane	1	4	7			6	6	5	5	
G	Extend guardrail south of Bishop Lane	1	8				4	6	8	6	
H	Green bike lane striping (Stanford Weekend Acres Area)	1	7	3			5	6	6	5	
I	Keep Clear Zones at Piers Lane, Bishop Lane, Wildwood Lane, & Stowe Lane		1	8			2	1	4	1	
J	Install speed feedback signs in Stanford Weekend Acres Area (2 locations)		9	5			1	10	2	3	
K	Shift roadway to widen bike lane to 5' (striping change only)		2	6			3	3	10	4	

#### Notes:

<sup>1</sup> Seven tables completed the exercise; those tables that weren't occupied or didn't complete the exercise are left blank

Phase 2:

Letter	Improvement	Table									
		1	2	3	4	5	6	7 <sup>1</sup>	8 <sup>1</sup>	9 <sup>1</sup>	10
A	Roundabout at La Mesa Drive	1	8	3	3	-100	12				No
B	Close one right-out only Ladera County Shopper access driveway	7	12	No	12	0					2
C	Bike lane buffer extension to La Cuesta Drive	8	10		11	6	7				1
D	Roundabout at La Cuesta Drive	2	9	4	4	-100	4				1
D-Alt	Add turn lanes on La Cuesta Drive	15			x	5	5				2
E	Restrict gas station exit at La Cuesta Drive	16	11		5	1					1
F	Signals at I-280 ramps	3	1	6	1	2	1				No
F-Alt	Roundabouts at I-280 ramps	4	No	8	x	-100	2				No
G	Remove free southbound on-ramp from northbound Alpine Road	3	6	18	x	7	7				
H	Convert free right-turn at southbound off-ramp to stop control	5	13	No	6	4	7				1
I	Extend northbound on-ramp merge lane	14	4	7	x	9					2
J	Left-turn lanes and bike slots at Piers Lane	17	5	5	10	10	2				2
K	Dish Tail parking area modification	18	14		x	-100	12				1
L	Extend acceleration lane and turn pockets at Stowe Lane and Bishop Lane	6	3	2	2	16	7				2
M	Consolidate driveway access at Wildwood Lane	9	No	1	7	8	7				2
M-Alt	Two-way left-turn lane median at Wildwood Lane	11	2	No	x	17					2
N	Improve northbound bus stop at Stowe Lane	13	7		8	18	14				5
O	On-Street Path Extension to Stowe Lane	10	6		9	3	5				1

Notes:

<sup>1</sup> Seven tables completed the exercise; those tables that weren't occupied or didn't complete the exercise are left blank

Pictures of the summary prioritization boards are included at the end of this summary.

Some tables provided other suggested improvements that are not currently a part of this project. These included:

- Move crosswalk on Alpine Trail off ramp from 280 going NB across to improve visibility

- Put Roundabout at Page Mill Road!
- Keep stop signs at I-280 & Alpine for bike safety
- Our group's priority #1 is 25mph regulatory speed thru SWA!
- Traffic light at La Cuesta Drive
- Square-off entrance to on-ramp (Northbound I-280)

After the table priority setting exercise, the group reconvened to discuss the themes and clarify the scores.

**Question & Answer Period**

At the very end of the meeting the following summary questions were addressed. The questions below were summarized from the comment cards turned in at the meeting:

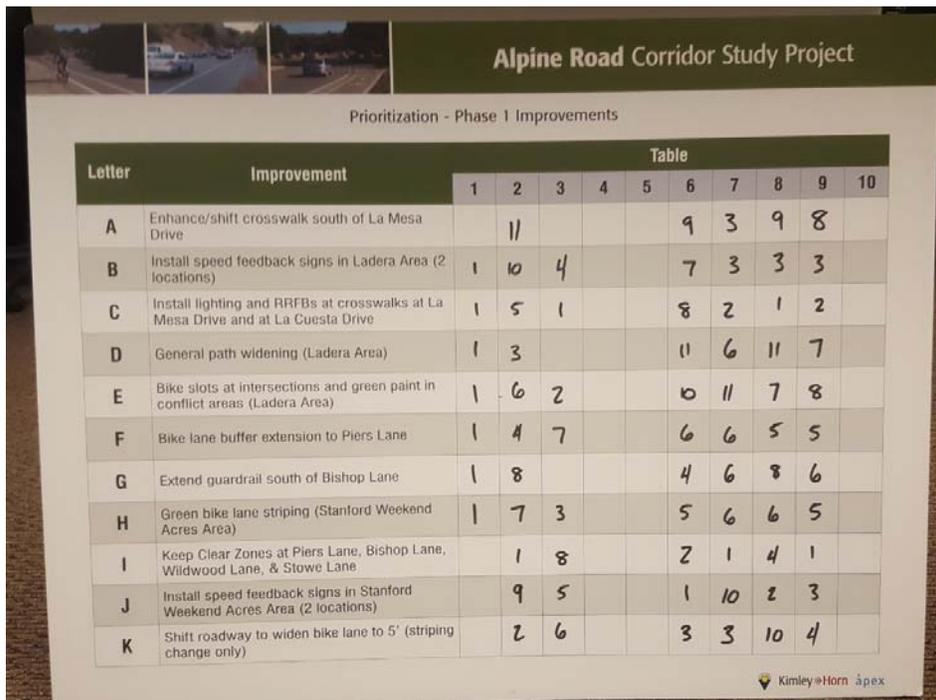
Please explain position on Ladera traffic lights	They were presented as an option at the May meeting. Feedback received at that meeting was overwhelming in preference of roundabouts instead of traffic signals at those locations. There is nothing to preclude them from being introduced if the community decided they wanted them at La Mesa and La Cuesta.
Could just the signal/roundabout at 280 northbound ramps be put in?	That may be a feasible option. The existing queuing issue that affects the corridor as a whole is predominately caused by the northbound ramps. However, a traffic analysis of that scenario has not been performed. We do not know absent of such an analysis how traffic would be impacted.
Who would be in charge of 280 ramp metering?	The freeway ramps are under Caltrans control and budget. There are currently no plans for ramp metering at Alpine Road/280 interchange in the near future.

<p>If we were to close the eastbound Alpine Road to southbound 280 on-ramp movement what about the other southbound on-ramp?</p>	<p>The loop on-ramp would essentially stay the same. It would only be modified to provide access from northbound (eastbound) Alpine. Instead of two merges in a short distance on the freeway, there would only be a single merge, which would make it easier to get on the freeway.</p>
<p>If a roundabout was put in now could it be “fine-tuned” in the future?</p>	<p>Not really. The roundabout has a fairly high cost and would be designed for its ultimate configuration. Adding lanes in the future would only make it more challenging to navigate and could be very expensive.</p>
<p>What, if any, plans are there at Page Mill Road and 280?</p>	<p>Santa Clara County has been working with Caltrans on a design that would add a roundabout at Page Mill and 280. If the Santa Clara County ballot Measure B passes next week there would be funding available for that project.</p>
<p>Is there an opportunity to coordinate all three interchanges (Sand Hill, Alpine and Page Mill) along 280?</p>	<p>There are projects ongoing or planned to improve Sand Hill and Page Mill. All operate under Caltrans jurisdiction and thus Caltrans coordinates all efforts. That said, Caltrans, Menlo Park and San Mateo County staff do meet and coordinate.</p>
<p>Who is the lead for a Junipera Serra Boulevard project?</p>	<p>That is a Menlo Park project.</p>
<p>For the Dish parking issue is the County and the project team coordinating with Stanford?</p>	<p>Yes.</p>

<p>Who is responsible for speed enforcement along Alpine Road?</p>	<p>California Highway Patrol (CHP) is responsible for the speed enforcement and moving violations. The Sherriff's Department is responsible for parking and other non-moving violations. The County can ask for more CHP enforcement but CHP does have other areas to enforce so they need to spread themselves around.</p>
<p>Can signage be improved to better notify drivers of upcoming intersections?</p>	<p>Yes, that can be looked at.</p>
<p>Can rumble strips be added along Alpine Road?</p>	<p>While rumble strips are effective at notifying drivers when they leave their lane, bicyclists view them as dangerous and a hazard, thus they are not recommended.</p>
<p>Was widening Alpine Road approaching I-280 to the west/north looked at?</p>	<p>No widening of the roadway was considered as part of this project. That would be difficult terrain to do widening. The land would also likely be owned by Stanford.</p>
<p>Can someone look at fixing or removing the chain link fence near Bishop Lane?</p>	<p>Yes, we can look into that.</p>
<p>Could Bishop get pre-timed lights?</p>	<p>Bishop Lane does not meet signal warrants.</p>
<p>Can the three key SWA intersections be considered as one intersection for warrant purposes?</p>	<p>No. However even if you did, the volumes are so low they would not meet warrants.</p>
<p>The road should not be made smoother or faster. The neighbors want this to be a slow road serving our neighborhood not a cut through for commuters. The neighborhood wishes should be the priority. The traffic should be slowed.</p>	<p>CHP cannot enforce artificially slow speed limits. The 35mph limit proposed with targeted enforcement should do a lot to slow the traffic along Alpine Road.</p>

Will garbage trucks be able to serve Wildwood?	Design details still need to be worked out but it is expected that ability would be preserved.
Is there anything that would prevent you from just eliminating the Dish Trail parking?	That would need to be coordinated with Stanford. Removing parking at the Dish Trail may result in Trail users parking at Bishop, Wildwood, or Stowe.
The line of sight is bad where the trail crosses the I-280 northbound ramps.	That is planned to be fixed as part of the Alpine Trail project.
Can there be a bicycle pocket added at Piers Lane in Phase 1?	It may be too tight with the available right-of-way, but we can look into that.
A stop sign at 280 is the best for bicyclists.	Comment noted.
When Supervisors turned down the \$10m from Stanford they said they would come up with the funds to make Alpine Road improvements.	The staff here this evening cannot speak to that issue.

## Meeting Photos



**Alpine Road Corridor Study Project**

Prioritization - Phase 1 Improvements

Letter	Improvement	Table									
		1	2	3	4	5	6	7	8	9	10
A	Enhance/shift crosswalk south of La Mesa Drive		11				9	3	9	8	
B	Install speed feedback signs in Ladera Area (2 locations)	1	10	4			7	3	3	3	
C	Install lighting and RRFs at crosswalks at La Mesa Drive and at La Cuesta Drive	1	5	1			8	2	1	2	
D	General path widening (Ladera Area)	1	3				11	6	11	7	
E	Bike slots at intersections and green paint in conflict areas (Ladera Area)	1	6	2			10	11	7	8	
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I	Keep Clear Zones at Piers Lane, Bishop Lane, Wildwood Lane, & Stowe Lane		1	8			2	1	4	1	
J	Install speed feedback signs in Stanford Weekend Acres Area (2 locations)		9	5			1	10	2	3	
K	Shift roadway to widen bike lane to 5' (striping change only)		2	6			3	3	10	4	

Kimley-Horn & Apex

Meeting Summary by Apex Strategies.

Attachment:

Comment/Question Cards Received

Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: Jen Coleman Phone or email: jennifer.collins@gmail.com

Residence Address or Neighborhood: Ladera

Question(s): \_\_\_\_\_

Can we just replace the one stop sign  
at the 280 intersection with one  
traffic light?

(Traffic issues are mostly north of 280)

Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

SSLMDA.COM

Name: RICK VORECK Phone or email: RICK.VORECK @

Residence Address or Neighborhood: 2673 ALPINE RD.

Question(s): I AM NOT IN FAVOR OF THE PARKING LOT  
AT PIERS LANE, PLEASE DO NOT DO THIS!  
IF YOU MUST DO NOT REMOVE ANY OF MY  
VEGETATION BETWEEN THE LOT & MY HOUSE!

① THE NORTHBOUND L-TURN POCKET AT ALPINE ACCESS  
RD SHOULD BE 2 WAY TO ALLOW A S-BOUND  
ALPINE L-TURN FROM PIERS LN.

## Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

JUNE 9

Name: NEIL SCOTTPhone or email: NSCOTT54@MIR.COM

Residence Address or Neighborhood: \_\_\_\_\_

Question(s): \_\_\_\_\_

WHY CAN THE <sup>SOUTHBOUND</sup> BUS STOP OPPOSITE WILDWOOD NOT BE REINSTATED ?

THIS WOULD INCREASE PEDESTRIAN CROSSINGS WITH "ON DEMAND" FLASH LIGHTS JUST AS PROPOSED ON THE LADERA SIDE.

## Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: LANGBEIN

Phone or email: JOHN LANGBEIN@YAHOO.COM

Residence Address or Neighborhood: \_\_\_\_\_

Question(s): \_\_\_\_\_

1) ~~TRAIL~~ TRAIL CROSSING FROM 280 OFF RAMP GOING TO NB ALPINE

→ THIS NEEDS TO BE MOVED AS PART OF PHASE 1

2) BIKE POCKET LANE ON SB ALPINE AT SLAC ACCESS -

PHASE 1

3) PHASE II - ~~THE~~ REPORT NEEDS TO RECOGNIZE THAT

CURRENT STOP SIGN CONFIGURATION <sup>AT 280</sup> IS THE SAFEST

CONFIGURATION FOR CYCLISTS; BOTH TRAFFIC LIGHT AND ROUNDABOUTS SIGNIFICANTLY NEGATIVELY IMPACTS BIKE SAFETY

(OVER)

Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: NEIL SCOTT Phone or email: N SCOTT SYCOMA@COM.IL

Residence Address or Neighborhood: \_\_\_\_\_

Question(s): THE GOAL SHOULD BE TO  
SLOW TRAFFIC DOWN ALONG ALPINE  
≡

4 NOT TO LOOK FOR WAYS TO  
SPEED THE TRAFFIC UP

### Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: WALTER NELSON

Phone or email: <sup>↓ one</sup> 21451@PRODIGY.NET  
650 854 6377

Residence Address or Neighborhood: \_\_\_\_\_

Question(s): ONE OF THE GOALS WAS STREET  
AESTHETICS — ~~THE~~ WHY CAN'T THE  
CHAIN LINK FENCE ACROSS FROM BISHOP  
BE REMOVED I WAS INSTALLED > 40 YRS.  
AGO & WAS SUPPOSED BE TEMPIRY UNTIL  
THE HILL STABILIZED

## Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: Cynthia Whipple Phone or email: cynthia-whipple@yahoo.com

Residence Address or Neighborhood: 32 SNECKNER CT.

Question(s): \_\_\_\_\_

- 1) Can we install "Cars Entering Roadway" signs in SWA for side street intersections? (since no lights/stop signs)
  - 2) Increase traffic speed enforcement. (seems to be none.)
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

General → Speed  
Bishop → Signals pretimed  
→ bumps on bike lanes

### Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: \_\_\_\_\_ Phone or email: \_\_\_\_\_

Residence Address or Neighborhood: Near Bishop

Question(s): Have Raised Bumps and road lane reflectors been considered to keep cars in lanes?  
Have periodic timed traffic stops been considered to control traffic speed? Also ~~could~~ may limit need to widen lanes and have longer acceleration lanes.

WILDWOOD

### Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: ESTHER DICKS

Phone or email: BUBBY.ESTHER@GMAIL.COM

Residence Address or Neighborhood: SWA

Question(s): HAS THERE BEEN COORDINATION WITH STANFORD AS THIS IS  
BEING PLANNED? IF THE AT+T BOX COULD BE MOVED I WOULD  
STRONGLY ENCOURAGE CONSOLIDATING WILDWOOD TO ONE ACCESS  
POINT WITH BETTER VISIBILITY.

~~WOODSIDE~~  
Speed enforcement

### Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: MASSIMILIANO FATICA Phone or email: MFATICA@GMAIL.COM

Residence Address or Neighborhood: 2489 ALPINE RD

Question(s): IS THE GARBAGE TRUCK GOING TO BE ABLE TO USE THE  
SINGLE WOODSIDE ENTRANCE?

WHO IS RESPONSIBLE FOR SPEED ENFORCEMENT?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: NEIL SCOTT

Phone or email: N SCOTT 54@MTC.COM

Residence Address or Neighborhood: \_\_\_\_\_

Question(s): WHY NOT ELIMINATE THE DISH  
PARKING • THE SWA + LAUREA  
RESIDENTS WALK TO THE DISH, BUT  
HAVE TO TOLERATE THE CONGESTION  
& DANGEROUS CONDITIONS IMPOSED BY THE  
~~DISH~~ DISH OUT OF AREA TRAFFIC.

## Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: Bob Peterson Phone or email: peterson@mac.com

Residence Address or Neighborhood: 271 Mimosa Way - Ladern

Question(s): I'd suggest that a significant deficiency in the overall plan (as presented tonight) is the noted lack of coordination with Stanford, particularly for Dish parking. If Stanford wishes people to access the dish, then they need to provide dedicated land. Secondly, I am absolutely for cutting into the hillside between Ⓟ and Ⓠ to widen Alpine. Why can't this be accomplished?

Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: ANGELA HEY Phone or email: amhey@hey.mash.com

Residence Address or Neighborhood: 4570 ALPINE RD, PORTOLA RD  
CA 94028

Question(s): \_\_\_\_\_

① If you do close southbound ramp to 280 from Alpine, is it a single lane in east direction on the ramp from S Bound 280 to Alpine.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016**

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: \_\_\_\_\_ Phone or email: \_\_\_\_\_

Residence Address or Neighborhood: \_\_\_\_\_

Question(s): Can we have a round about (or signal) on the

north 280 interchange and leave south as-is?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: \_\_\_\_\_ Phone or email: \_\_\_\_\_

Residence Address or Neighborhood: \_\_\_\_\_

Question(s): How can we petition CalTrans for metering lights  
at Sand Hill and 280?

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**Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016**

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: \_\_\_\_\_

Phone or email: \_\_\_\_\_

Residence Address or Neighborhood: \_\_\_\_\_

Question(s): How can a round about be timed as traffic  
patterns change. Traffic signals can be  
retimed as conditions change both during  
the day week & over decades.

## Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: John Fowler Phone or email: jfowler@kezapbio.com

Residence Address or Neighborhood: 270 Erica wy, Ladera

Question(s): As a parent of 3 kids, we are very much  
in favor of stoplights / roundabouts or at the  
very least lighting at the two Ladera  
crosswalks across Alpine Rd. Please let  
me know what additional community feedback you need to  
hear from Ladera residents to solidify a plan for  
stoplights - my first choice & I believe the 1st choice  
of many others.

**Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016**

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: Kathy Wright Phone or email: Kathy\_lwright@yahoo.com

Residence Address or Neighborhood: Ladera

Question(s): Please Consider Traffic lights at  
La Mesa and La Cuesta

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**Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016**

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: Michael Wright Phone or email: Michael.wright@sri.com

Residence Address or Neighborhood: Ladera

Question(s): I prefer signalization @ La Mesa & La Grue

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Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: Mr Rower Phone or email: \_\_\_\_\_

Residence Address or Neighborhood: \_\_\_\_\_

Question(s): Remove signage at Shell station  
that blocks line of sight south on  
Alpine from La Cuesta.  
- Make the no parking zones on Alpine  
towe away zones and enforce it.

Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: \_\_\_\_\_ Phone or email: \_\_\_\_\_

Residence Address or Neighborhood: Portola Valley

Question(s): What is being done @ Page Mill Road/280 intersection?

What is being done @ Junipero Serra & Stanford Campus Drive West

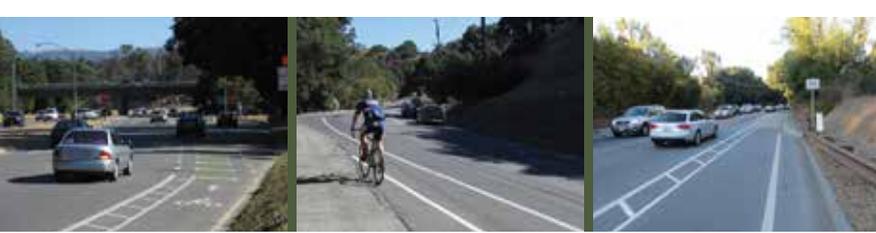
Alpine Road Corridor Study, Community Meeting #3 – Nov 1, 2016

If you have any questions that you would like addressed during the Q&A portion of the presentation, please fill out this card and hand it to a member of the project team.

Name: JOHN PENCAVEL Phone or email: pencavel@stanford.edu

Residence Address or Neighborhood: 20 Sneekner Court

Question(s): So much about allowing cars to drive fast  
a good deal about bicycle lanes  
very little about the well-being of pedestrians  
Why?



# Alpine Road

## CORRIDOR STUDY PROJECT

### Appendix C

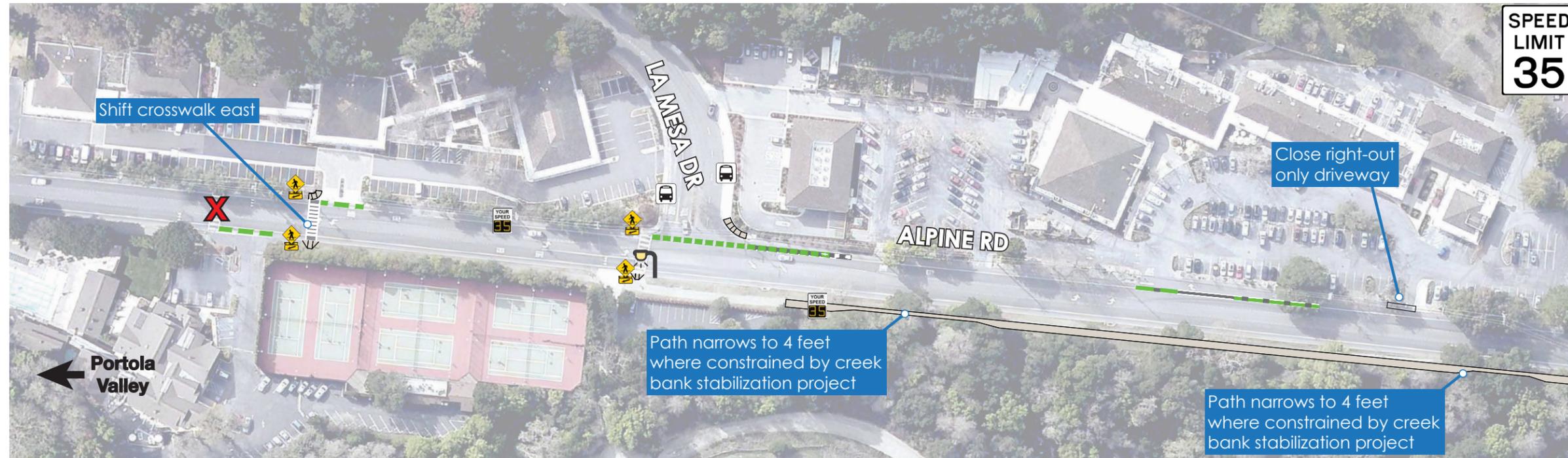
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#### Improvement Concept Alternatives Preliminary Designs

# Alpine Road Corridor Study



NOT TO SCALE



**Legend**

	Safety Lighting		Speed Feedback Sign
	Rapid Rectangular Flashing Beacon (RRFB)		Bus Stop



# Alpine Road Corridor Study



NOT TO SCALE



**Legend**

	Safety Lighting		Speed Feedback Sign
	Rapid Rectangular Flashing Beacon (RRFB)		Bus Stop

# Alpine Road Corridor Study



**Legend**

- Safety Lighting
- Speed Feedback Sign
- Rapid Rectangular Flashing Beacon (RRFB)
- Bus Stop

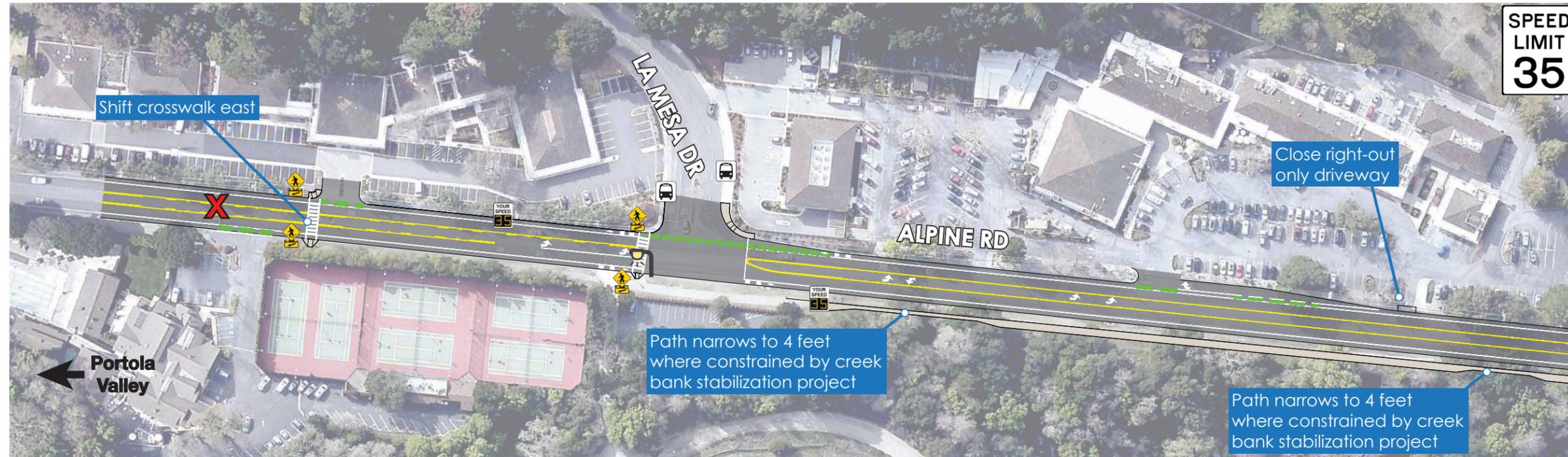


NOT TO SCALE

# Alpine Road Corridor Study



NOT TO SCALE



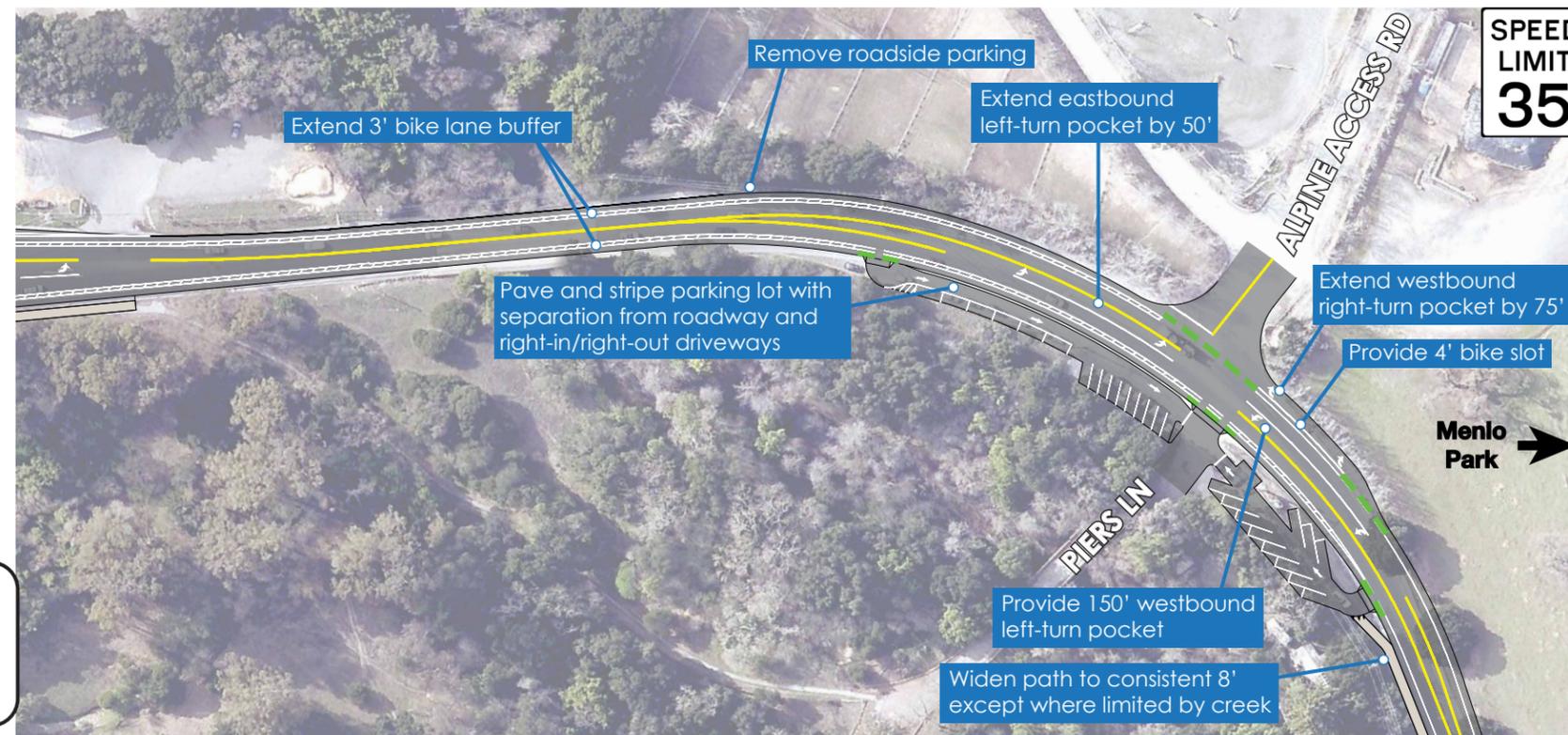
**Legend**

	Safety Lighting		Speed Feedback Sign
	Rapid Rectangular Flashing Beacon (RRFB)		Bus Stop

# Alpine Road Corridor Study



NOT TO SCALE



**Legend**

	Safety Lighting		Speed Feedback Sign
	Rapid Rectangular Flashing Beacon (RRFB)		Bus Stop

# Alpine Road Corridor Study



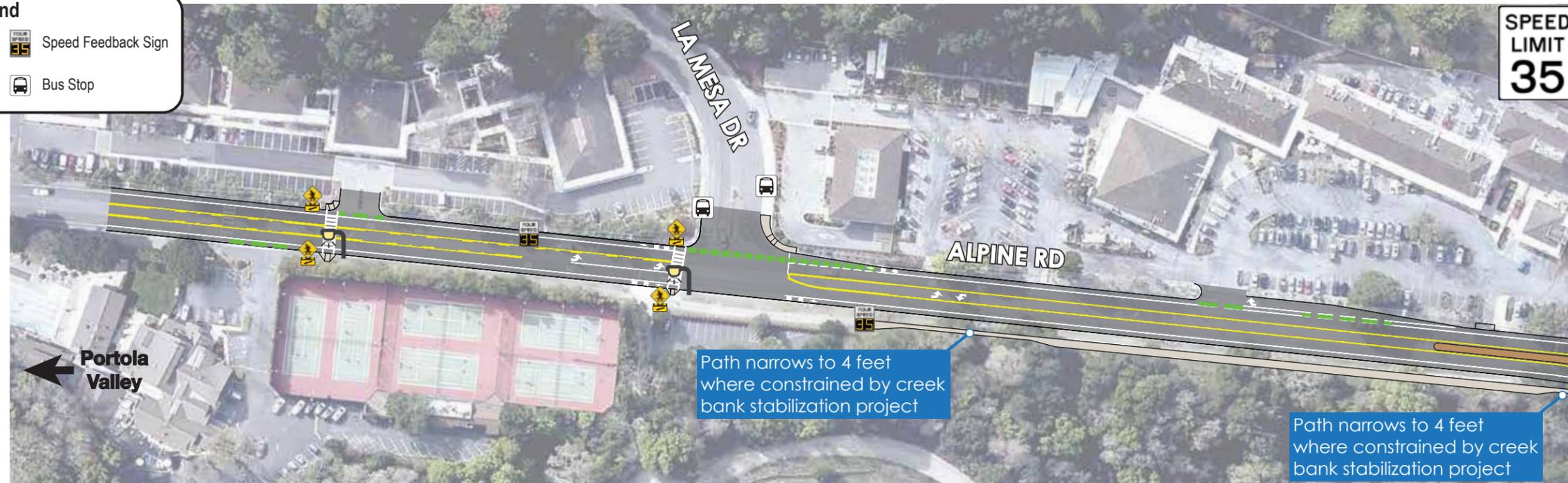
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Legend	
	Safety Lighting
	Rapid Rectangular Flashing Beacon (RRFB)
	Speed Feedback Sign
	Bus Stop

# Alpine Road Corridor Study

**Legend**

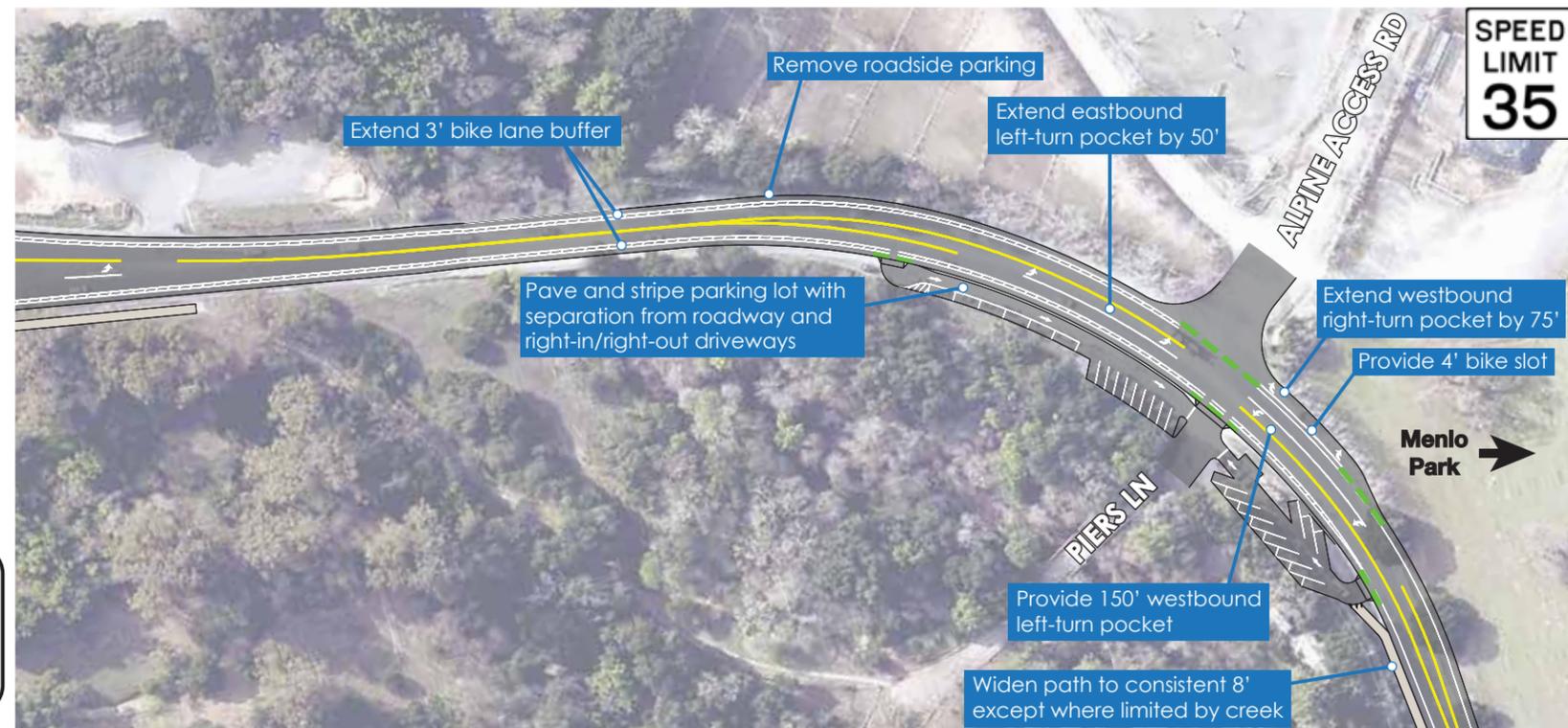
- Safety Lighting
- Rapid Rectangular Flashing Beacon (RRFB)
- Speed Feedback Sign
- Bus Stop



# Alpine Road Corridor Study



NOT TO SCALE



**Legend**

	Safety Lighting		Speed Feedback Sign
	Rapid Rectangular Flashing Beacon (RRFB)		Bus Stop

# Alpine Road Corridor Study



NOT TO SCALE

Legend	
	Safety Lighting
	Rapid Rectangular Flashing Beacon (RRFB)
	Speed Feedback Sign
	Bus Stop

# Alpine Road Corridor Study

**Legend**

- Safety Lighting
- Rapid Rectangular Flashing Beacon (RRFB)
- Speed Feedback Sign
- Bus Stop

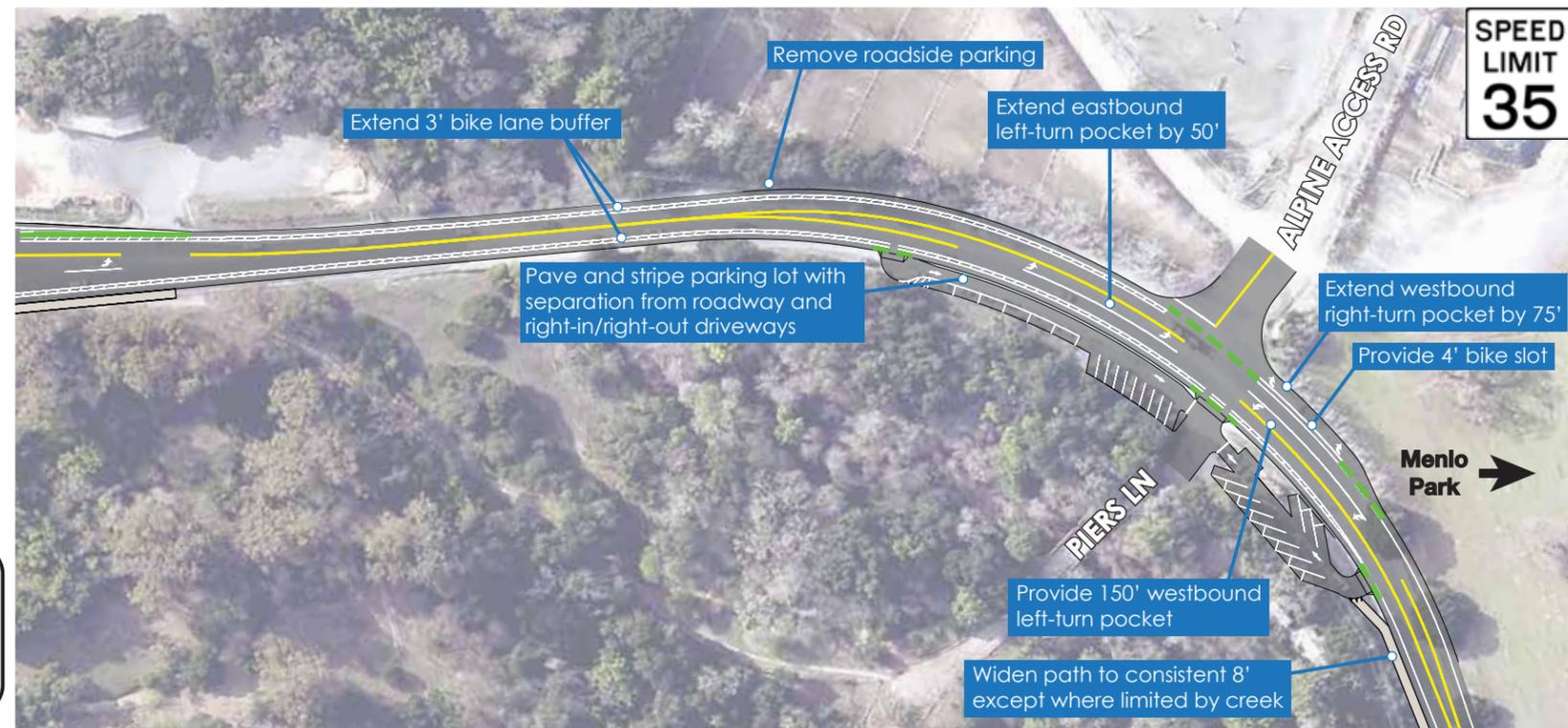
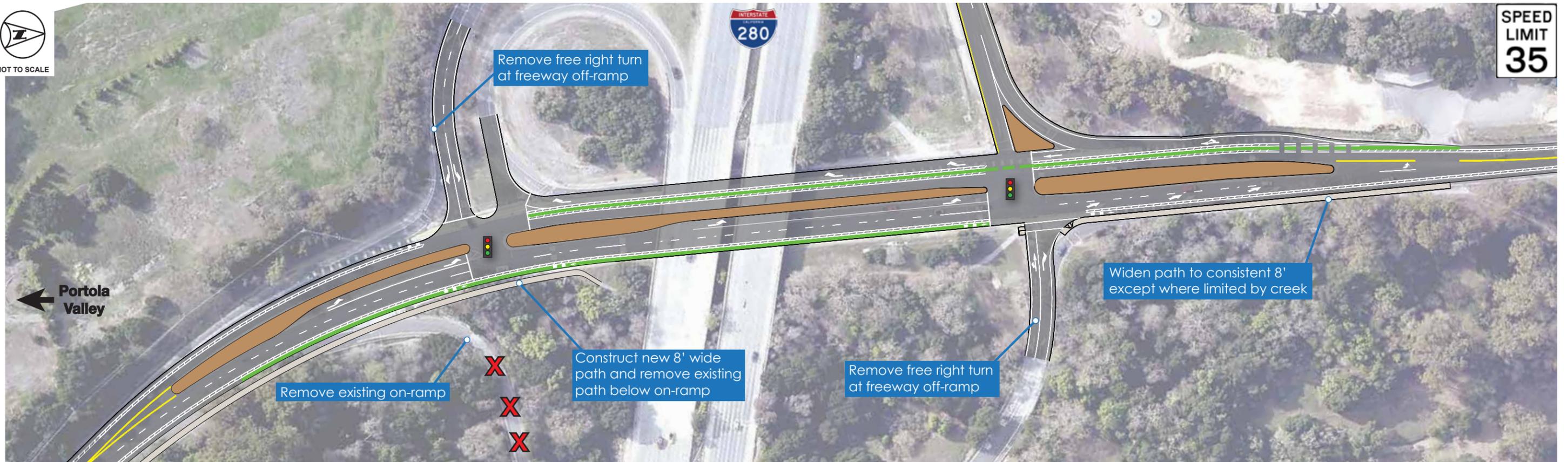


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# Alpine Road Corridor Study



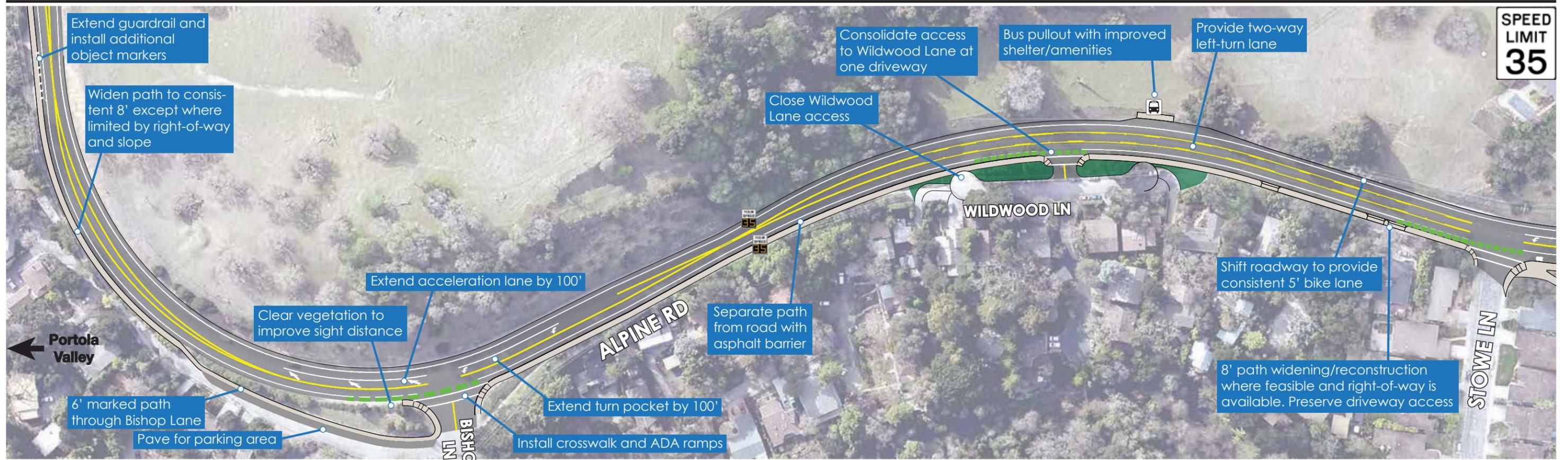
NOT TO SCALE



**Legend**

	Safety Lighting		Speed Feedback Sign
	Rapid Rectangular Flashing Beacon (RRFB)		Bus Stop

# Alpine Road Corridor Study



Legend	
	Safety Lighting
	Rapid Rectangular Flashing Beacon (RRFB)
	Speed Feedback Sign
	Bus Stop

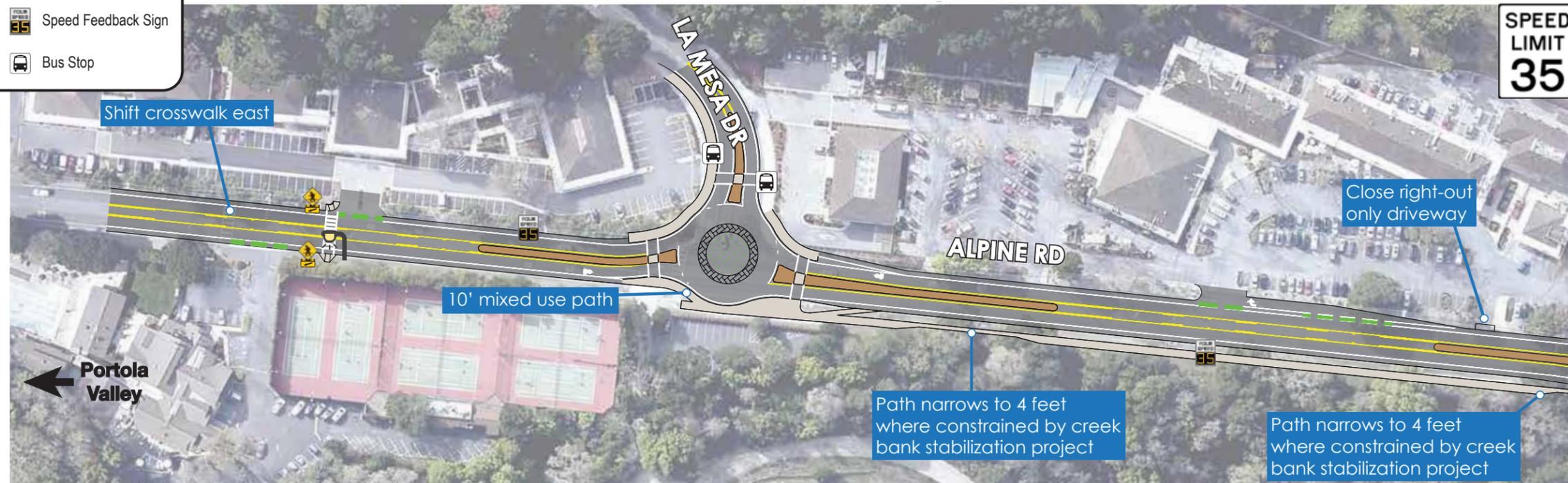


NOT TO SCALE

# Alpine Road Corridor Study

**Legend**

- Safety Lighting
- Rapid Rectangular Flashing Beacon (RRFB)
- Speed Feedback Sign
- Bus Stop



# Alpine Road Corridor Study



NOT TO SCALE



**Legend**

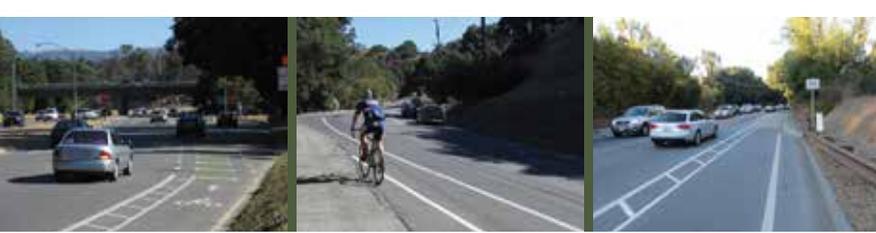
	Safety Lighting		Speed Feedback Sign
	Rapid Rectangular Flashing Beacon (RRFB)		Bus Stop

# Alpine Road Corridor Study



NOT TO SCALE

Legend	
	Safety Lighting
	Rapid Rectangular Flashing Beacon (RRFB)
	Speed Feedback Sign
	Bus Stop



# Alpine Road

## CORRIDOR STUDY PROJECT

## Appendix D

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### Queueing Analysis Results

Alpine Road Corridor Traffic Improvement Study  
Average Queue Length

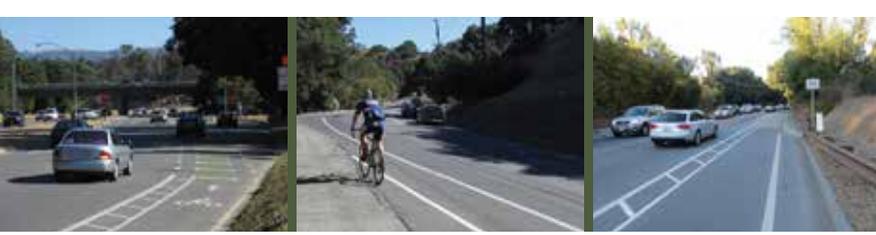
Near-Term Average Queues in Feet

#	Intersection	Movement	Existing (2015)			Near-Term (2020)			Alternative 1 Near-Term			Alternative 2 Near-Term			Alternative 3 Near-Term			Alternative 4 Near-Term			Alternative 5 Near-Term			
			AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	
12	Santa Cruz Ave / & Alpine Rd	Junipero Serra Blvd	NBLT																					
			NB THRU	230.2	85.2	114.7	295.9	91.4	120.7	630.2	99.1	121.9	113.1	59.2	83.5	123.5	56.2	87.8	113.5	58.0	82.4	143.6	55.6	84.9
			NBRT	52.3	3.7	5.5	59.0	4.0	5.7	63.1	3.7	4.3	45.0	4.1	5.9	52.9	3.9	6.1	47.6	3.9	5.9	50.5	4.0	5.9
			SBLT	76.5	431.1	426.5	75.8	466.1	436.0	77.5	536.9	485.2	76.4	65.7	81.5	76.0	70.0	80.1	76.1	66.2	88.1	75.4	66.9	81.7
			SB THRU	76.5	431.1	426.5	75.8	466.1	436.0	77.5	536.9	485.2	76.4	65.7	81.5	76.0	70.0	80.1	76.1	66.2	88.1	75.4	66.9	81.7
			SBRT																					
			WBLT	22.5	328.2	439.4	21.9	403.8	470.6	25.6	974.6	826.5	23.6	51.6	84.1	23.6	49.1	86.1	23.6	48.3	84.4	24.7	49.8	86.5
			WB THRU																					
1	Alpine Rd & Stowe Ln		WBRT	114.7	36.6	101.7	176.7	68.9	118.9	137.4	64.8	151.9	20.4	17.9	36.3	33.5	17.3	42.2	21.2	16.7	33.0	30.6	17.5	43.7
			NBLT																					
			NB THRU	3.2	0.0	0.0	5.0	0.0	0.0	40.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			NBRT	3.4	0.0	0.0	5.4	0.0	0.0	41.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			SBLT	46.6	1281.6	1032.5	0.0	1346.6	1028.4	0.0	1468.2	1243.6	0.2	0.0	0.2	0.2	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1
			SB THRU	45.1	1295.5	1041.2	0.0	1368.2	1031.0	0.0	1487.0	1246.8	0.3	0.0	0.1	0.2	0.1	0.1	0.2	0.1	0.2	0.4	0.1	0.1
			SBRT																					
			WBLT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
2	Alpine Rd & Wildwood Ln (N)		WB THRU																					
			WBRT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.0	0.2
			NBLT																					
			NB THRU	1.6	0.0	0.0	2.5	0.0	0.0	27.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			NBRT																					
			SBLT	21.7	282.6	203.5	1.0	298.9	200.3	4.3	351.0	269.7	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
			SB THRU	20.1	262.2	187.5	0.8	277.7	184.7	3.8	327.6	250.8	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			SBRT																					
4	Alpine Rd & Bishop Ln		WBLT	1.4	45.6	73.2	1.8	44.7	72.5	5.2	31.5	115.2	20.2	20.5	45.7	20.0	20.3	45.5	0.6			0.4	0.3	0.0
			WB THRU																					
			WBRT	1.7	43.6	72.9	2.0	42.3	72.2	6.7	28.5	114.5	20.2	20.4	45.7	20.0	20.3	45.5	0.6			1.1	0.3	0.0
			NBLT																					
			NB THRU	0.0	0.0	0.0	2.0	0.0	0.0	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			NBRT	0.5	0.0	0.0	2.0	0.0	0.0	25.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			SBLT	42.8	576.7	430.7	0.0	600.6	418.5	0.6	641.8	517.6	0.4	0.1	0.3	0.5	2.1	0.3	0.0	0.0	0.0	0.3	0.1	0.2
			SB THRU	39.6	528.1	391.7	0.0	550.3	380.4	0.0	592.0	474.1	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Alpine Rd & Piers Ln / Alpine Access Rd		SBRT																					
			WBRT	1.3	0.4	0.5	1.3	0.4	0.5	7.9	0.5	0.8	1.4	0.4	0.5	1.1	0.4	0.5	1.5	0.3	0.5	1.8	0.4	0.5
			NBLT	1.2	1.0	0.9	2.1	1.5	0.9	4.2	2.6	0.0	1.4	0.8	0.4	2.1	1.6	0.5	8.1	5.6	4.4	4.8	2.3	0.8
			NB THRU	0.1	0.0	0.0	0.6	0.0	0.0	1.4	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	8.1	5.6	4.4	0.9	0.0	0.0
			NBRT	0.7	0.0	0.0	1.7	0.6	0.0	3.5	1.7	0.0	0.8	0.3	0.0	1.4	0.8	0.0	8.1	5.6	4.4	6.1	2.8	1.0
			SBLT	93.2	1101.5	856.2	1.8	1122.9	857.7	165.1	1137.5	979.3	0.4	0.5	0.3	0.5	15.3	0.4	8.1	14.2	10.3	0.0	7.5	0.2
			SB THRU	90.5	1068.3	825.9	1.6	1089.8	826.8	155.2	1104.8	947.5	0.3	0.4	0.3	0.4	14.3	0.2	8.1	14.2	10.3	0.0	6.1	0.0
			SBRT	92.4	1091.0	846.6	1.7	1112.4	847.9	161.9	1127.2	969.2	0.3	0.5	0.3	0.5	15.2	0.3	0.0	0.0	0.0	0.0	4.6	0.0
			EBLT	4.1	214.8	254.1	0.5	218.9	253.7	0.8	240.6	253.7	0.6	12.0	10.0	0.5	6.5	6.5	0.0	4.1	3.3	0.5	8.0	9.0
			EB THRU	4.1	216.2	255.6	0.5	220.3	255.1	0.8	242.1	255.2	0.5	11.9	9.8	0.3	6.2	6.0	0.0	3.9	3.1	0.4	8.1	9.0
			EBRT	4.4	218.1	257.0	0.6	222.1	256.6	1.6	243.6	256.7	0.6	13.8	12.0	0.4	6.7	6.4	0.0	10.7	9.7	0.5	8.0	9.0
			6	Alpine Rd & I-280 NB Ramps		WBLT	0.2	0.3	1.9	0.4	0.2	1.4	0.0	0.1	1.3	0.3	0.1	0.3	0.5	0.2	0.8	0.1	0.2	0.8
WB THRU	0.4	0.1				1.0	0.4	0.1	0.7	0.0	0.0	0.0	0.2	0.1	0.2	0.4	0.1	0.4	0.0	0.0	0.0	0.4	0.1	0.4
WBRT	0.4	0.2				1.0	0.5	0.1	0.7	0.1	0.1	0.2	0.5	0.1	0.2	0.7	0.1	0.4	0.2	0.1	0.2	0.4	0.1	0.4
NBLT	84.7	45.3				23.1	100.5	47.9	23.0	78.9	73.1	46.8	78.1	77.3	40.9	0.3	0.2	0.0	78.4	70.3	35.1	0.3	0.1	0.1
NB THRU	55.6	27.5				12.7	69.0	29.2	12.3	46.9	46.9	20.9	78.1	77.3	40.9	0.3	0.2	0.0	78.4	70.3	35.1	0.3	0.1	0.1
NBRT																								
SBLT																								
SB THRU	185.5	796.2				493.1	71.1	782.4	509.1	644.2	903.3	889.2	49.0	33.9	18.7	43.0	64.0	15.5	46.1	34.7	18.8	52.9	57.5	13.2
SBRT	0.0	0.0				0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
EBLT																								
EB THRU																								
EBRT																								
WBLT	12.1	7.2	6.7	12.3	7.0	6.9	10.8	7.5	13.0	15.1	22.3	20.7	30.5	1.3	0.7	14.8	21.7	20.9	8.7	1.6	0.9			
WB THRU	12.1	7.2	6.7	12.3	7.0	6.9	10.8	7.5	13.0	22.6	33.4	31.1	30.5	1.3	0.7	22.2	32.5	31.4	8.7	1.6	0.9			
WBRT	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	265.6	14.1	27.1	0.0	0.0	0.0	261.3	14.4	27.9	0.0	0.0	0.0			









# Alpine Road

## CORRIDOR STUDY PROJECT

## Appendix E

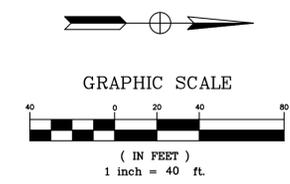
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### Preferred Concept Alternative Preliminary Designs



MATHCLINE SEE SHEET 2

ALPINE ROAD  
PHASE 1 - NEAR-TERM IMPROVEMENTS



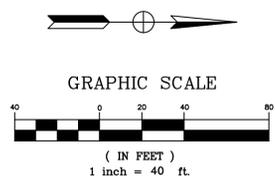
MARCH 2017  
SHEET 1 OF 8



MATHLINE SEE SHEET 1

MATHLINE SEE SHEET 3

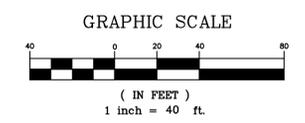
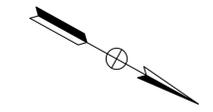
ALPINE ROAD  
 PHASE 1 - NEAR-TERM IMPROVEMENTS



MARCH 2017  
 SHEET 2 OF 8



ALPINE ROAD  
 PHASE 1 - NEAR-TERM IMPROVEMENTS



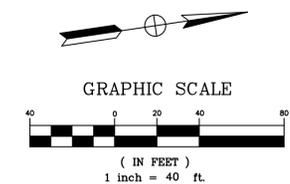
MARCH 2017  
 SHEET 3 OF 8



MATCHLINE SEE SHEET 3

MATCHLINE SEE SHEET 5

ALPINE ROAD  
 PHASE 1 - NEAR-TERM IMPROVEMENTS



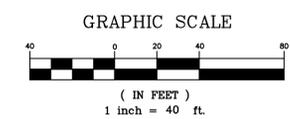
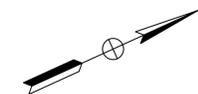
MARCH 2017  
 SHEET 4 OF 8



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MATCHLINE SEE SHEET 6

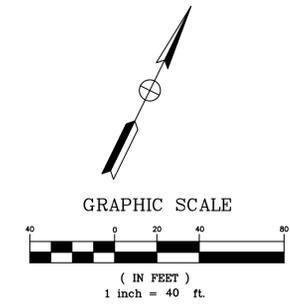
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PHASE 1 - NEAR-TERM IMPROVEMENTS



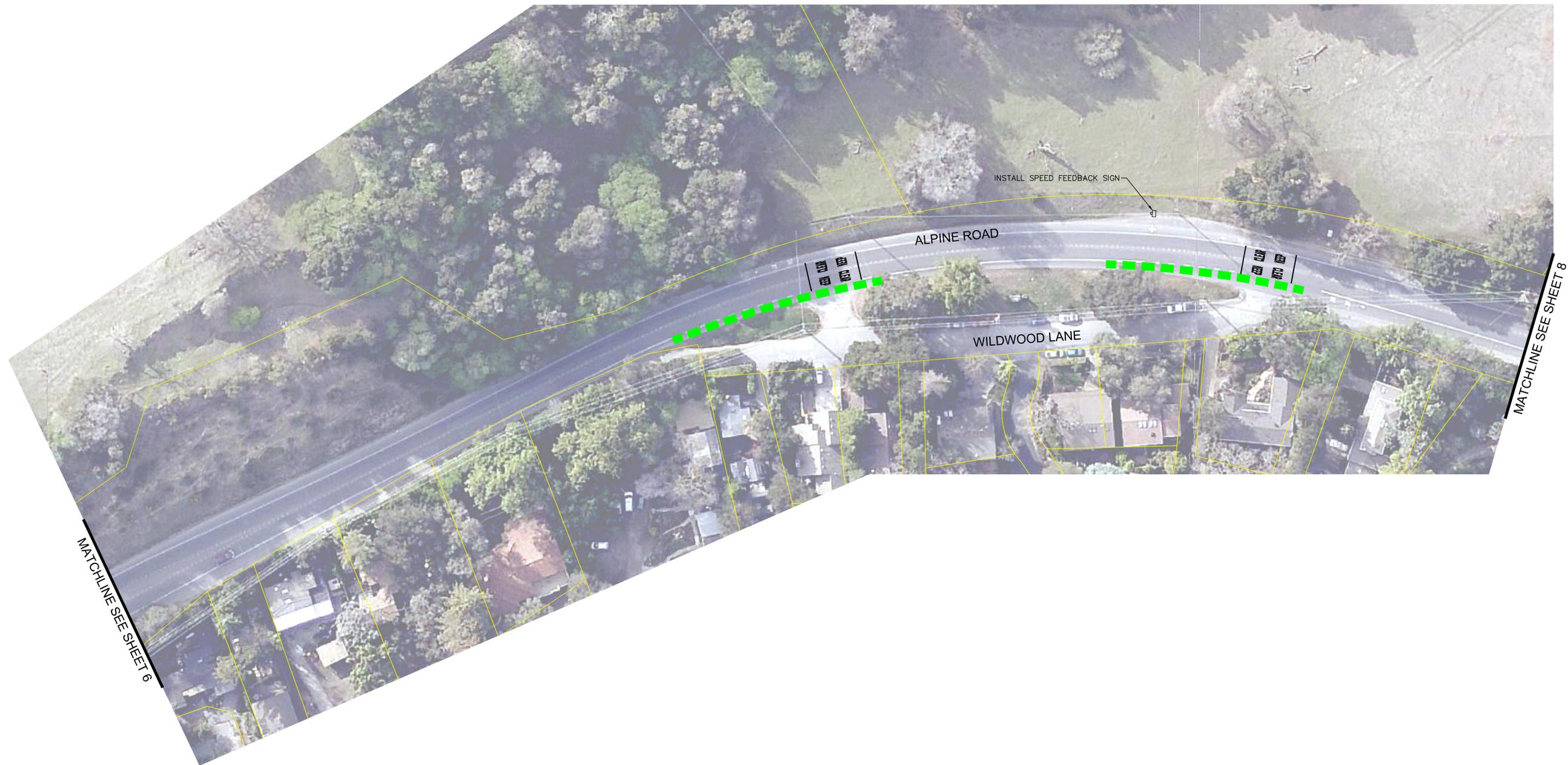
MARCH 2017  
SHEET 5 OF 8



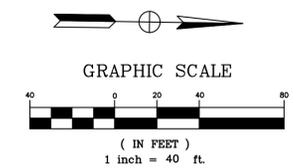
ALPINE ROAD  
 PHASE 1 - NEAR-TERM IMPROVEMENTS



MARCH 2017  
 SHEET 6 OF 8



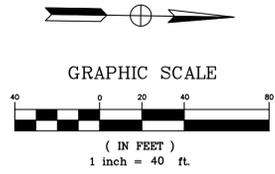
ALPINE ROAD  
PHASE 1 - NEAR-TERM IMPROVEMENTS



MARCH 2017  
SHEET 7 OF 8

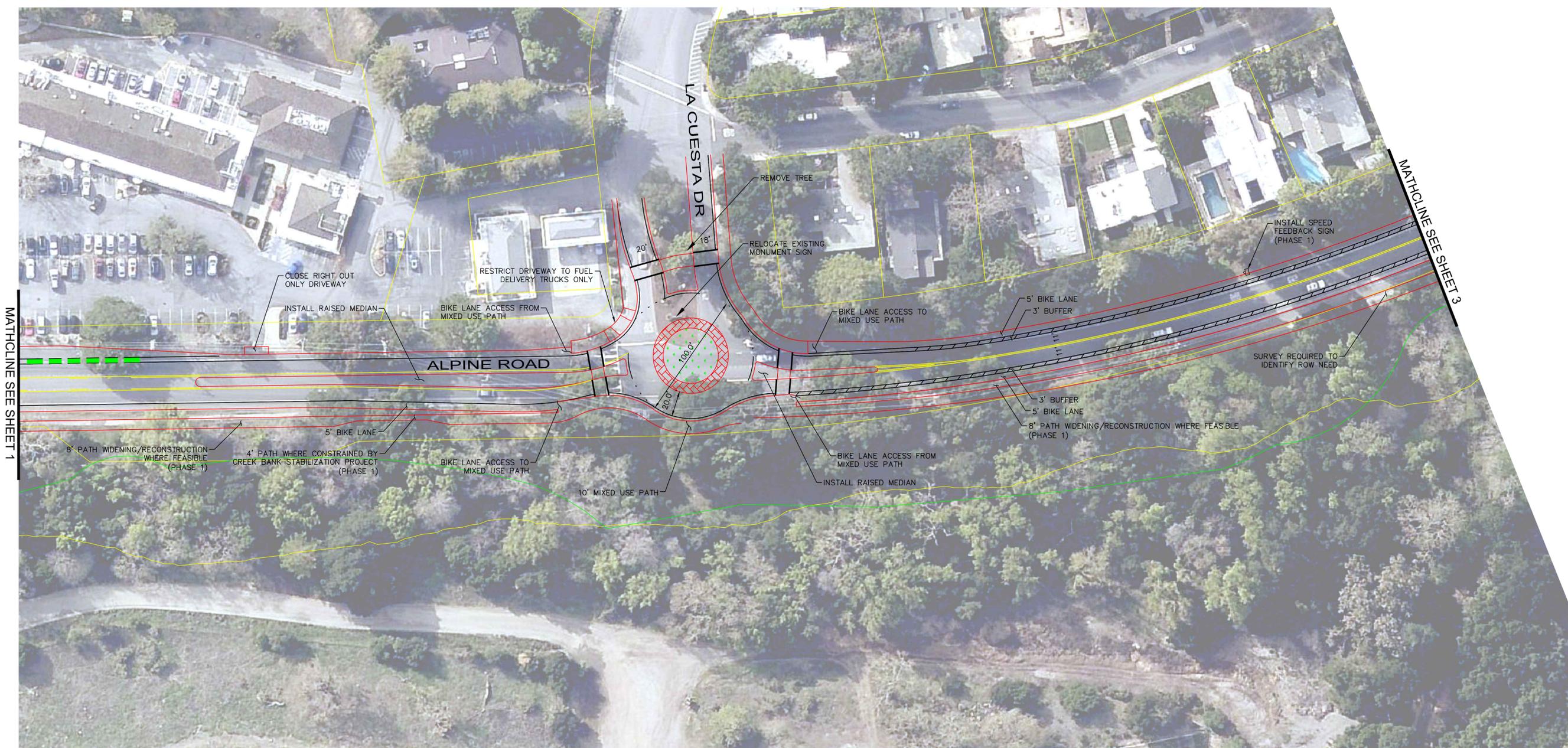


ALPINE ROAD  
PHASE 1 - NEAR-TERM IMPROVEMENTS

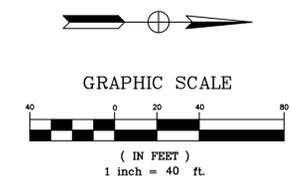


MARCH 2017  
SHEET 8 OF 8

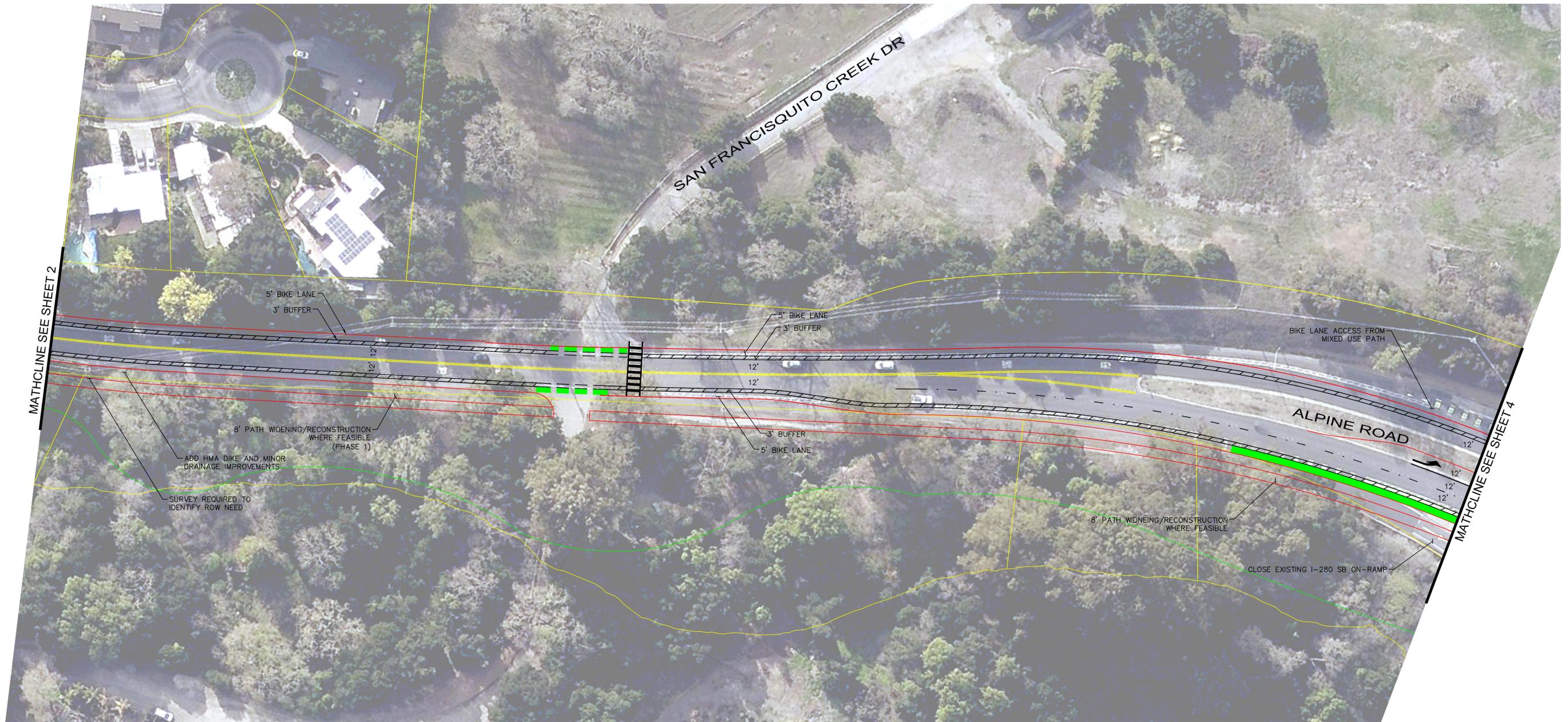




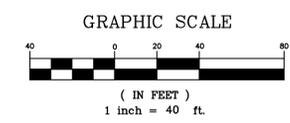
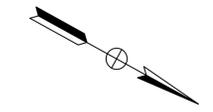
**ALPINE ROAD  
PHASE 2 - LONGER-TERM IMPROVEMENTS**



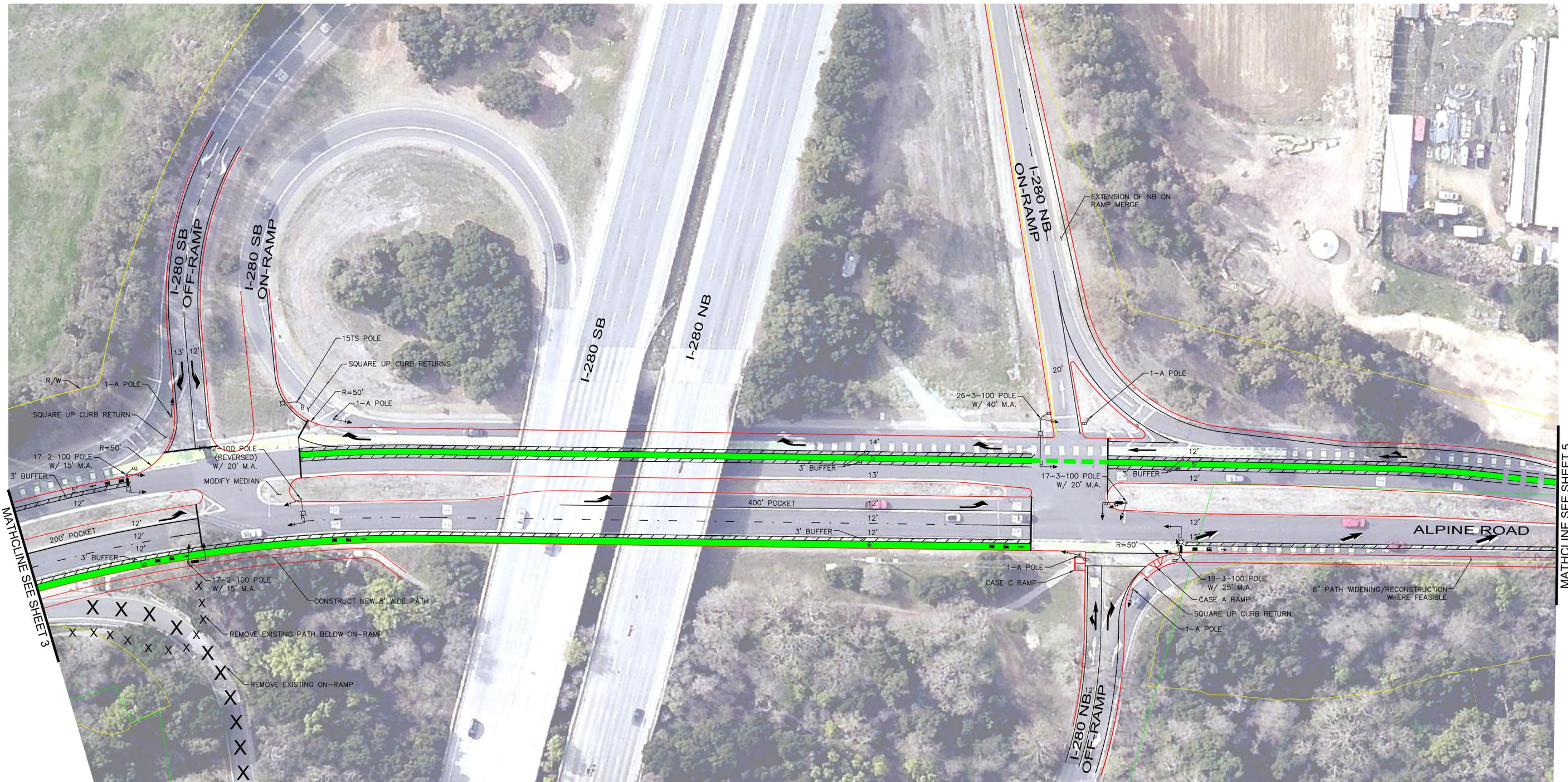
MARCH 2017  
SHEET 2 OF 8



ALPINE ROAD  
 PHASE 2 - LONGER-TERM IMPROVEMENTS



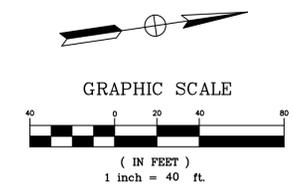
MARCH 2017  
 SHEET 3 OF 8



MATCHLINE SEE SHEET 3

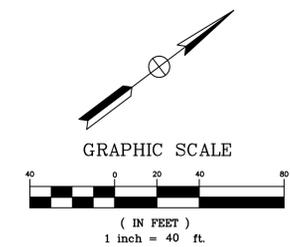
MATCHLINE SEE SHEET 5

**ALPINE ROAD  
PHASE 2 - LONGER-TERM IMPROVEMENTS**

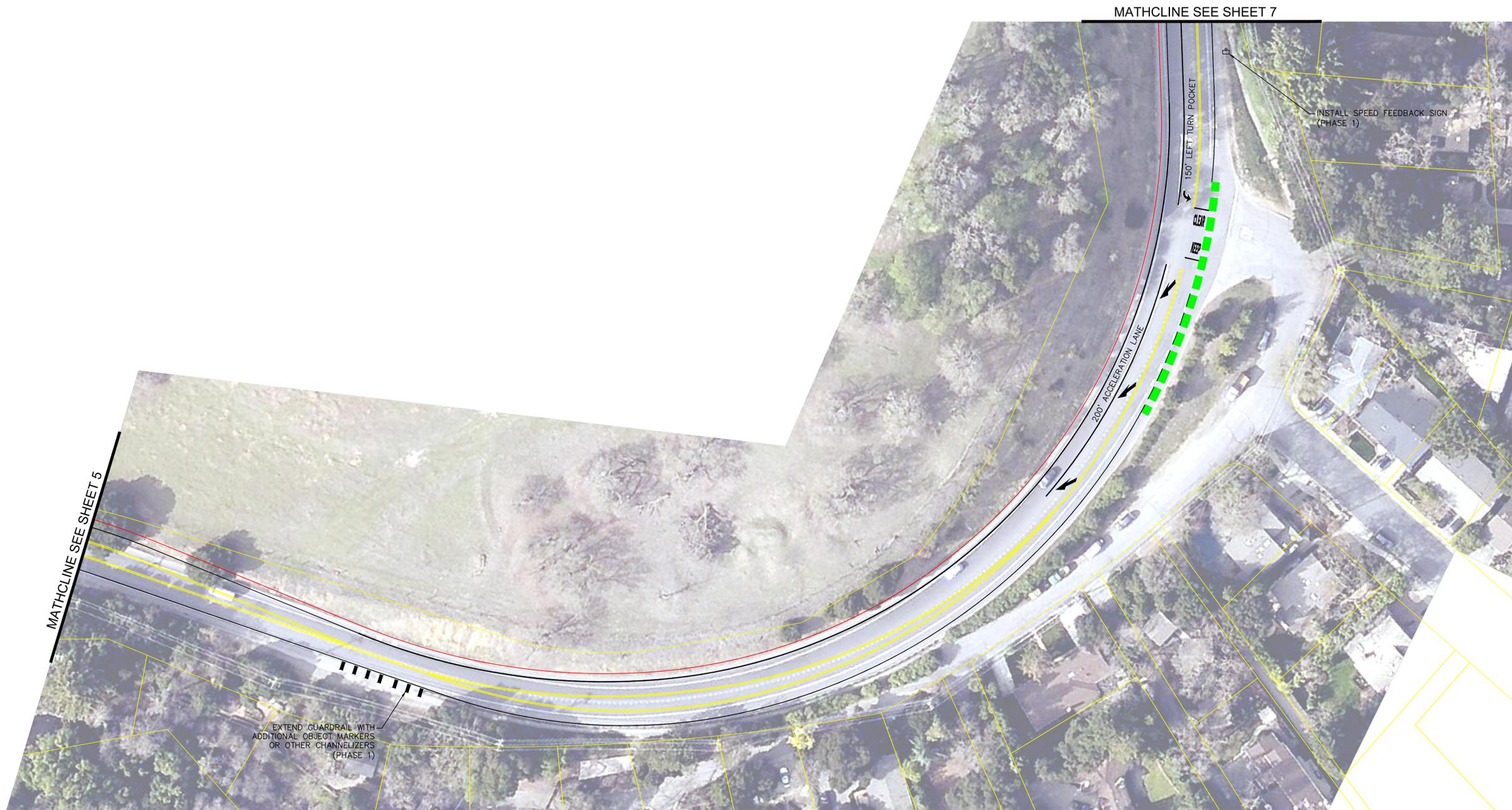




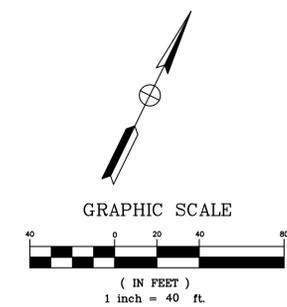
ALPINE ROAD  
 PHASE 2 - LONGER-TERM IMPROVEMENTS



MARCH 2017  
 SHEET 5 OF 8



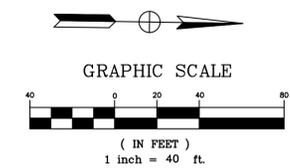
ALPINE ROAD  
PHASE 2 - LONGER-TERM IMPROVEMENTS



MARCH 2017  
SHEET 6 OF 8



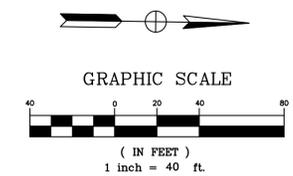
ALPINE ROAD  
PHASE 2 - LONGER-TERM IMPROVEMENTS



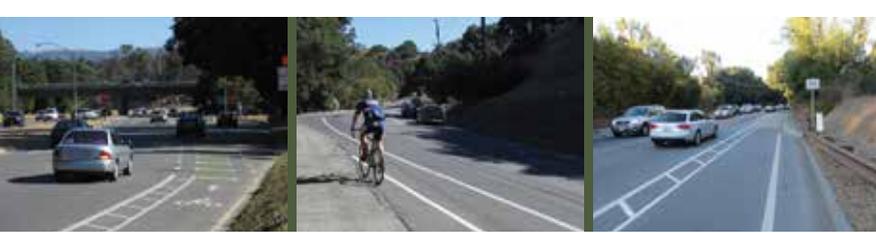
MARCH 2017  
SHEET 7 OF 8



ALPINE ROAD  
 PHASE 2 - LONGER-TERM IMPROVEMENTS



MARCH 2017  
 SHEET 8 OF 8



# Alpine Road

## CORRIDOR STUDY PROJECT

## Appendix F

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### Preferred Concept Alternative Opinions of Probable Cost

**ALPINE ROAD CORRIDOR STUDY**  
 Engineer's Opinion of Probable Construction Cost - Summary  
 October 2016

Improvement Type	Phase 1		Phase 2		Alternative Phase 2	
	Low End	High End	Low End	High End	Low End	High End
<b>Segment 1: LADERA</b>						
Roundabout at La Cuesta Dr	-	-	\$1,871,000	\$2,532,000	-	-
General path widening	\$110,000	\$149,000	-	-	-	-
Roundabout at La Mesa Dr	-	-	\$1,880,000	\$2,543,000	-	-
Enhance/Shift crosswalk s/o La Mesa Dr	\$78,000	\$106,000	-	-	-	-
Restrict gas station exit at La Cuesta	-	-	\$9,000	\$12,000	-	-
Bike slots & Buffered bike lanes	\$30,000	\$40,000	\$705,000	\$954,000	-	-
Narrowing median to provide turn lanes at La Cuesta Dr	-	-	-	-	\$115,000	\$155,000
Restrict shopping center driveway access	-	-	\$4,000	\$6,000	-	-
Install lighting and RRFBs at crosswalks at La Mesa and La Cuesta	\$54,000	\$74,000	-	-	-	-
Install speed feedback signs	\$9,000	\$12,000	-	-	-	-
<b>Estimated Segment 1 Cost Ranges</b>	<b>\$281,000</b>	<b>\$381,000</b>	<b>\$4,469,000</b>	<b>\$6,047,000</b>		
<b>Segment 2: I-280 to PIERS LANE</b>						
Roundabouts at I-280 ramps	-	-	-	-	\$8,376,000	\$11,332,000
Left turn lanes and bike slot at Piers Lane/Alpine Access Road			\$231,000	\$313,000		
Signals at I-280 ramps (includes square-up free-rights)	-	-	\$1,153,000	\$1,560,000	-	-
Removal of free southbound on-ramp from NB Alpine Rd	-	-	\$1,500,000	\$2,029,000	-	-
Bike lane buffer extensions	\$19,000	\$26,000	-	-	-	-
Remove free-right turn at SB off-ramp			\$332,000	\$449,000		
Extend NB ramp merge (Ramp widening/lengthening only)	-	-	\$704,000	\$952,000	-	-
<b>Estimated Segment 2 Cost Ranges</b>	<b>\$19,000</b>	<b>\$26,000</b>	<b>\$3,920,000</b>	<b>\$5,303,000</b>		
<b>Segment 3: STANFORD WEEKEND ACRES</b>						
Consolidated driveway access at Wildwood Ln	-	-	\$1,492,000	\$2,019,000	-	-
On-Street Path Extension to Stowe Ln	-	-	\$486,000	\$658,000	-	-
Two-way left-turn lane median at Wildwood Ln	-	-	-	-	\$1,277,000	\$1,727,000
Extend acceleration lanes and/or turn pockets	-	-	\$469,000	\$634,000	-	-
Improve northbound bus pullout and stop	-	-	\$109,000	\$148,000	-	-
Shift roadway to widen bike lane to 5' (restriping only)	\$26,000	\$35,000	-	-	-	-
Extend guardrail or other channelizers south of Bishop Ln	\$21,000	\$29,000	-	-	-	-
Install speed feedback signs	\$9,000	\$12,000	-	-	-	-
Keep Clear Zone on Alpine at Piers Ln	\$2,000	\$4,000				
Keep Clear Zone on Alpine at Wildwood Ln	\$2,000	\$4,000				
Keep Clear Zone on Alpine at Bishop Ln	\$2,000	\$4,000				
Keep Clear Zone on Alpine at Stowe Ln	\$2,000	\$4,000				
Green Bike Lane Striping (miscellaneous locations)	\$20,000	\$30,000				
<b>Estimated Segment 3 Cost Ranges</b>	<b>\$56,000</b>	<b>\$76,000</b>	<b>\$2,556,000</b>	<b>\$3,459,000</b>		

	Phase 1		Phase 2	
<b>Estimated Total Phase Cost Range</b>	<b>\$356,000</b>	<b>\$483,000</b>	<b>\$10,945,000</b>	<b>\$14,809,000</b>

## ALPINE ROAD CORRIDOR STUDY

## Phase 2 - La Mesa Intersection Roundabout

Engineer's Opinion of Probable Cost  
October 2016

Item	Description	Quantity	Unit	Unit Cost	Total
1	Traffic Control	1	LS	\$30,000	\$30,000
2	Erosion Control	1	LS	\$10,000	\$10,000
3	Clearing and Grubbing	1	LS	\$5,000	\$5,000
4	Tree Removal	2	EA	\$1,500	\$3,000
5	Roadway Excavation (Includes removal of sidewalk, curb/gutter, etc.)	2,626	CY	\$40	\$105,036
6	Roadway Pavement	10,214	SF	\$15	\$153,210
7	Minor Concrete (New Driveway)	-	SF	\$25	\$0
8	Minor Concrete (Type A2 Curb and Gutter)	1,085	LF	\$35	\$37,975
9	Minor Concrete (Type A1 Curbs)	1,527	LF	\$20	\$30,540
10	Minor Concrete (Mountable Curb - Truck Apron)	185	LF	\$25	\$4,625
11	Minor Concrete (Sidewalk)	3,803	SF	\$15	\$57,045
12	Minor Concrete (Truck Apron, stamped, colored)	1,307	SF	\$40	\$52,280
13	ADA Curb Ramp	6	EA	\$3,000	\$18,000
14	Hardscaping	4,314	SF	\$12	\$51,768
15	Landscaping/Clean water features	3,995	SF	\$45	\$179,775
16	Thermoplastic Pavement Marking	213	SF	\$6	\$1,278
17	Thermoplastic Traffic Stripe (White)	93	LF	\$2	\$186
18	Thermoplastic Traffic Stripe (Yellow)	3,042	LF	\$2	\$6,084
19	Green Pavement Marking	-	SF	\$12	\$0
20	Roadside Signs	6	EA	\$500	\$3,000
21	RRFB	-	EA	\$12,000	\$0
22	Speed Feedback Signs	-	EA	\$5,000	\$0
23	Retaining Wall (Caltrans Type 1A - assume max H=4')	90	LF	\$350	\$31,500
24	Relocate Jeep Trail Driveway and Reconfigure Parking Lot	1	LS	\$15,000	\$15,000
25	Slurry Seal	16,550	SF	\$1	\$16,550
26	Utilities (5% of project items)	1	LS	\$40,600	\$40,600
27	Drainage (7% of project items)	1	LS	\$56,900	\$56,900
28	Lighting and Electrical (3% of project items)	1	LS	\$24,400	\$24,400
29	Mobilization (10% of project items)	1	LS	\$81,200	\$81,200
				<b>Construction Sub-Total</b>	<b>\$1,014,952</b>
				<b>40% Contingency</b>	<b>\$405,981</b>
				<b>Construction Total</b>	<b>\$1,421,000</b>
	RIGHT OF WAY ACQUISITION	800	SF	\$100	\$80,000
	ENGINEERING/DESIGN (18% OF CONSTRUCTION COST)	1	LS	\$255,780	\$255,780
	ENVIRONMENTAL (15% OF CONSTRUCTION COST)	1	LS	\$213,150	\$213,150
	CONSTRUCTION MANAGEMENT (15% OF CONSTRUCTION COST)	1	LS	\$213,150	\$213,150
	PERMITTING (2% OF CONSTRUCTION COST)	1	LS	\$28,420	\$28,420
				<b>Other Project Costs Total =</b>	<b>\$790,500</b>
				<b>GRAND TOTAL =</b>	<b>\$2,211,500</b>

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## ALPINE ROAD CORRIDOR STUDY

## Phase 2 - Roundabout at La Cuesta Dr

Engineer's Opinion of Probable Cost  
October 2016

Item	Description	Quantity	Unit	Unit Cost	Total
1	Traffic Control	1	LS	\$30,000	\$30,000
2	Erosion Control	1	LS	\$10,000	\$10,000
3	Clearing and Grubbing	1	LS	\$5,000	\$5,000
4	Tree Removal	2	EA	\$1,500	\$3,000
5	Roadway Excavation (Includes removal of sidealk, curb/gutter, etc.)	2,979	CY	\$40	\$119,145
6	Roadway Pavement	12,500	SF	\$15	\$187,500
7	Minor Concrete (New Driveway)	-	SF	\$25	\$0
8	Minor Concrete (Type A2 Curb and Gutter)	1,500	LF	\$35	\$52,500
9	Minor Concrete (Type A1 Curbs)	1,856	LF	\$20	\$37,120
10	Minor Concrete (Mountable Curb - Truck Apron)	185	LF	\$25	\$4,625
11	Minor Concrete (Sidewalk)	2,765	SF	\$15	\$41,475
12	Minor Concrete (Truck Apron, stamped, colored)	1,307	SF	\$40	\$52,280
13	ADA Curb Ramp	6	EA	\$3,000	\$18,000
14	Hardscaping	6,351	SF	\$12	\$76,207
15	Landscaping/Clean water features	3,885	SF	\$45	\$174,825
16	Thermoplastic Pavement Marking	213	SF	\$6	\$1,278
17	Thermoplastic Traffic Stripe (White)	2,122	LF	\$2	\$4,244
18	Thermoplastic Traffic Stripe (Yellow)	971	LF	\$2	\$1,942
19	Green Pavement Marking	-	SF	\$12	\$0
20	Roadside Signs	6	EA	\$500	\$3,000
21	RRFB	-	EA	\$12,000	\$0
22	Speed Feedback Signs	-	EA	\$5,000	\$0
23	Slurry Seal	16,350	SF	\$1	\$16,350
24	Utilities (5% of project items)	1	LS	\$42,000	\$42,000
25	Drainage (7% of project items)	1	LS	\$58,700	\$58,700
26	Lighting and Electrical (3% of project items)	1	LS	\$25,200	\$25,200
27	Mobilization (10% of project items)	1	LS	\$83,900	\$83,900
				<b>Construction Sub-Total</b>	<b>\$1,048,291</b>
				<b>40% Contingency</b>	<b>\$419,316</b>
				<b>Construction Total</b>	<b>\$1,467,700</b>
	RIGHT OF WAY ACQUISITION	-	SF	\$100	\$0
	ENGINEERING/DESIGN (18% OF CONSTRUCTION COST)	1	LS	\$264,186	\$264,186
	ENVIRONMENTAL (15% OF CONSTRUCTION COST)	1	LS	\$220,155	\$220,155
	CONSTRUCTION MANAGEMENT (15% OF CONSTRUCTION COST)	1	LS	\$220,155	\$220,155
	PERMITTING (2% OF CONSTRUCTION COST)	1	LS	\$29,354	\$29,354
				<b>Other Project Costs Total =</b>	<b>\$733,900</b>
				<b>GRAND TOTAL =</b>	<b>\$2,201,600</b>

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## ALPINE ROAD CORRIDOR STUDY

## Phase 1 - Enhance/Shift Crosswalk s/o La Mesa Dr

Engineer's Opinion of Probable Cost  
October 2016

Item	Description	Quantity	Unit	Unit Cost	Total
1	Traffic Control	1	LS	\$5,000	\$5,000
2	Erosion Control	0	LS		\$0
3	Clearing and Grubbing	1	LS	\$3,000	\$3,000
4	Tree Removal	0	EA	\$500	\$0
5	Roadway Excavation (Includes removal of sidealk, curb/gutter, etc.)	-	CY	\$60	\$0
6	Roadway Pavement	-	SF	\$15	\$0
7	Minor Concrete (New Driveway)	-	SF	\$25	\$0
8	Minor Concrete (Type A2 Curb and Gutter)	-	LF	\$35	\$0
9	Minor Concrete (Type A1 Curbs)	10	LF	\$20	\$200
10	Minor Concrete (Mountable Curb - Truck Apron)	-	LF	\$25	\$0
11	Minor Concrete (Sidewalk)	-	SF	\$10	\$0
12	Minor Concrete (Truck Apron, stamped, colored)	-	SF	\$40	\$0
13	ADA Curb Ramp	2	EA	\$3,000	\$6,000
14	Hardscaping	-	SF	\$12	\$0
15	Landscaping/Clean water features	-	SF	\$50	\$0
16	Thermoplastic Pavement Marking	198	SF	\$6	\$1,188
17	Thermoplastic Traffic Stripe (White)	86	LF	\$2	\$172
18	Thermoplastic Traffic Stripe (Yellow)	-	LF	\$2	\$0
19	Green Pavement Marking	-	SF	\$12	\$0
20	Roadside Signs	-	EA	\$500	\$0
21	RRFB	2	EA	\$12,000	\$24,000
22	Speed Feedback Signs	-	EA	\$5,000	\$0
23	Lighting	1	EA	\$20,000	\$20,000
24	Utilities	-	LS		\$0
25	Drainage (10% of project items)	-	LS		\$0
27	Mobilization (10% of project items)	1	LS	\$6,000	\$6,000
				<b>Sub-Total</b>	\$65,560
				<b>40% Contingency</b>	\$26,224
				<b>Bid Total</b>	<b>\$91,800</b>
	RIGHT OF WAY ACQUISITION	-	SF	\$100	\$0
	ENGINEERING/DESIGN (25% OF CONSTRUCTION COST)	1	LS	\$22,950	\$22,950
	ENVIRONMENTAL (5% OF CONSTRUCTION COST)	1	LS	\$4,590	\$4,590
	CONSTRUCTION MANAGEMENT (15% OF CONSTRUCTION COST)	1	LS	\$13,770	\$13,770
	PERMITTING (2% OF CONSTRUCTION COST)	1	LS	\$1,836	\$1,836
				<b>Other Project Costs Total =</b>	<b>\$43,100</b>
				<b>GRAND TOTAL =</b>	<b>\$134,900</b>

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## ALPINE ROAD CORRIDOR STUDY

**Alternate Phase 2 - Narrowing Median to Provide turn lanes at La Cuesta Dr**  
 Engineer's Opinion of Probable Cost  
 October 2016

Item	Description	Quantity	Unit	Unit Cost	Total
1	Traffic Control	1	LS	\$5,000	\$5,000
2	Erosion Control	0	LS	\$10,000	\$0
3	Clearing and Grubbing	0	LS	\$5,000	\$0
4	Tree Removal	0	EA	\$500	\$0
5	Roadway Excavation (Includes removal of sidealk, curb/gutter, etc.)	46	CY	\$60	\$2,771
6	Roadway Pavement	357	SF	\$15	\$5,355
7	Minor Concrete (New Driveway)	-	SF	\$25	\$0
8	Minor Concrete (Type A2 Curb and Gutter)	-	LF	\$35	\$0
9	Minor Concrete (Type A1 Curbs)	176	LF	\$20	\$3,520
10	Minor Concrete (Mountable Curb - Truck Apron)	-	LF	\$25	\$0
11	Minor Concrete (Sidewalk)	-	SF	\$10	\$0
12	Minor Concrete (Truck Apron, stamped, colored)	-	SF	\$40	\$0
13	ADA Curb Ramp	-	EA	\$3,000	\$0
14	Hardscaping	-	SF	\$12	\$0
15	Landscaping/Clean water features	1,200	SF	\$35	\$42,000
16	Thermoplastic Pavement Marking	84	SF	\$6	\$504
17	Thermoplastic Traffic Stripe (White)	144	LF	\$2	\$288
18	Thermoplastic Traffic Stripe (Yellow)	-	LF	\$2	\$0
19	Green Pavement Marking	-	SF	\$12	\$0
20	Roadside Signs	-	EA	\$500	\$0
21	RRFB	-	EA	\$12,000	\$0
22	Speed Feedback Signs	-	EA	\$5,000	\$0
23	Utilities (5% of project items)	0	LS		\$0
24	Drainage (5% of project items)	0	LS		\$0
25	Lighting and Electrical (3% of project items)	0	LS		\$0
26	Mobilization (10% of project items)	1	LS	\$6,000	\$6,000
				<b>Construction Sub-Total</b>	<b>\$65,438</b>
				<b>40% Contingency</b>	<b>\$26,175</b>
				<b>Construction Total</b>	<b>\$91,700</b>
	RIGHT OF WAY ACQUISITION		SF	\$100	\$0
	ENGINEERING/DESIGN (25% OF CONSTRUCTION COST)	1	LS	\$22,925	\$22,925
	ENVIRONMENTAL (5% OF CONSTRUCTION COST)	1	LS	\$4,585	\$4,585
	CONSTRUCTION MANAGEMENT (15% OF CONSTRUCTION COST)	1	LS	\$13,755	\$13,755
	PERMITTING (2% OF CONSTRUCTION COST)	1	LS	\$1,834	\$1,834
				<b>Other Project Costs Total =</b>	<b>\$43,100</b>
				<b>GRAND TOTAL =</b>	<b>\$134,800</b>

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## ALPINE ROAD CORRIDOR STUDY

## Phase 2 - Segment 1 Buffered Bike Lane

Engineer's Opinion of Probable Cost  
October 2016

Item	Description	Quantity	Unit	Unit Cost	Total
1	Traffic Control	1	LS	\$10,000	\$10,000
2	Erosion Control	1	LS	\$5,000	\$5,000
3	Clearing and Grubbing	1	LS	\$3,000	\$3,000
4	Tree Removal	15	EA	\$1,000	\$15,000
5	Roadway Excavation (Includes removal of sidealk, curb/gutter, etc.)	1,174	CY	\$40	\$46,963
6	Roadway Pavement	15,850	SF	\$15	\$237,750
7	Minor Concrete (New Driveway)	-	SF	\$25	\$0
8	Minor Concrete (Type A2 Curb and Gutter)	-	LF	\$35	\$0
9	Minor Concrete (Type A1 Curbs)	-	LF	\$20	\$0
10	Minor Concrete (Mountable Curb - Truck Apron)	-	LF	\$25	\$0
11	Minor Concrete (Sidewalk)	-	SF	\$10	\$0
12	Minor Concrete (Truck Apron, stamped, colored)	-	SF	\$40	\$0
13	ADA Curb Ramp	-	EA	\$3,000	\$0
14	Hardscaping	-	SF	\$12	\$0
15	Landscaping/Clean water features	-	SF	\$50	\$0
16	Thermoplastic Pavement Marking	-	SF	\$6	\$0
17	Thermoplastic Traffic Stripe (White)	6,592	LF	\$2	\$13,184
18	Thermoplastic Traffic Stripe (Yellow)	1,030	LF	\$2	\$2,060
19	Green Pavement Marking	-	SF	\$12	\$0
20	Roadside Signs	6	EA	\$500	\$3,000
21	RRFB	-	EA	\$12,000	\$0
22	Speed Feedback Signs	-	EA	\$5,000	\$0
23	Utilities	-	LS		\$0
24	Drainage (10% of project items)	1	LS	\$33,600	\$33,600
26	Mobilization (10% of project items)	1	LS	\$33,600	\$33,600
				<b>Sub-Total</b>	\$403,157
				<b>40% Contingency</b>	\$161,263
				<b>Bid Total</b>	<b>\$564,500</b>
	RIGHT OF WAY ACQUISITION	-	SF	\$100	\$0
	ENGINEERING/DESIGN (25% OF CONSTRUCTION COST)	1	LS	\$141,125	\$141,125
	ENVIRONMENTAL (5% OF CONSTRUCTION COST)	1	LS	\$28,225	\$28,225
	CONSTRUCTION MANAGEMENT (15% OF CONSTRUCTION COST)	1	LS	\$84,675	\$84,675
	PERMITTING (2% OF CONSTRUCTION COST)	1	LS	\$11,290	\$11,290
				<b>Other Project Costs Total =</b>	<b>\$265,300</b>
				<b>GRAND TOTAL =</b>	<b>\$829,800</b>

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- Buffered bike lanes and bike slot assumed to be between La Cuesta and north of San Francisquito Creek Road

## ALPINE ROAD CORRIDOR STUDY

## Alternative Phase 2 - Roundabouts at I-280 Ramps

Engineer's Opinion of Probable Cost  
October 2016

Item	Description	Quantity	Unit	Unit Cost	Total
1	Traffic Control	1	LS	\$100,000	\$100,000
2	Erosion Control	1	LS	\$20,000	\$20,000
3	Clearing and Grubbing	1	LS	\$10,000	\$10,000
4	Tree Removal	0	EA	\$500	\$0
5	Roadway Excavation (Includes removal of sidealk, curb/gutter, etc.)	15,239	CY	\$35	\$533,353
6	Roadway Pavement	84,200	SF	\$15	\$1,263,000
7	Minor Concrete (New Driveway)	-	SF	\$25	\$0
8	Minor Concrete (Type A2 Curb and Gutter)	2,584	LF	\$35	\$90,440
9	Minor Concrete (Type A1 Curbs)	4,499	LF	\$20	\$89,980
10	Minor Concrete (Mountable Curb - Truck Apron)	880	LF	\$25	\$22,000
11	Minor Concrete (Sidewalk)	-	SF	\$15	\$0
12	Minor Concrete (Truck Apron, stamped, colored)	8,168	SF	\$40	\$326,720
13	ADA Curb Ramp	6	EA	\$3,000	\$18,000
14	Hardscaping	10,584	SF	\$12	\$127,008
15	Landscaping/Clean water features	34,196	SF	\$25	\$854,900
16	Thermoplastic Pavement Marking	500	SF	\$6	\$3,000
17	Thermoplastic Traffic Stripe (White)	10,362	LF	\$2	\$20,724
18	Thermoplastic Traffic Stripe (Yellow)	3,479	LF	\$2	\$6,958
19	Green Pavement Marking	760	SF	\$12	\$9,120
20	Roadside Signs	15	EA	\$500	\$7,500
21	RRFB	-	EA	\$12,000	\$0
22	Speed Feedback Signs	-	EA	\$5,000	\$0
23	Slurry Seal	16,350	SF	\$1	\$16,350
24	Utilities (5% of project items)	1	LS	\$176,000	\$176,000
25	Drainage (7% of project items)	1	LS	\$246,400	\$246,400
26	Lighting and Electrical (3% of project items)	1	LS	\$105,600	\$105,600
27	Mobilization (10% of project items)	1	LS	\$352,000	\$352,000
				<b>Construction Sub-Total</b>	<b>\$4,399,053</b>
				<b>40% Contingency</b>	<b>\$1,759,621</b>
				<b>Construction Total</b>	<b>\$6,158,700</b>
	RIGHT OF WAY ACQUISITION		SF	\$100	\$0
	ENGINEERING/DESIGN (20% OF CONSTRUCTION COST)	1	LS	\$1,231,740	\$1,231,740
	ENVIRONMENTAL (15% OF CONSTRUCTION COST)	1	LS	\$923,805	\$923,805
	CONSTRUCTION MANAGEMENT (15% OF CONSTRUCTION COST)	1	LS	\$923,805	\$923,805
	PERMITTING (10% OF CONSTRUCTION COST)	1	LS	\$615,870	\$615,870
				<b>Other Project Costs Total =</b>	<b>\$3,695,200</b>
				<b>GRAND TOTAL =</b>	<b>\$9,853,900</b>

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## ALPINE ROAD CORRIDOR STUDY

## Phase 2 - Traffic Signals at I-280 NB and SB Ramp Intersections

Engineer's Opinion of Probable Cost  
October 2016

Item	Description	Quantity	Unit	Unit Cost	Total
1	Traffic Control	1	LS	\$35,000	\$35,000
2	Erosion Control	1	LS	\$10,000	\$10,000
3	Clearing and Grubbing	1	LS	\$5,000	\$5,000
4	Tree Removal	0	EA	\$500	\$0
5	Roadway Excavation (Includes removal of sidealk, curb/gutter, etc.)	639	CY	\$60	\$38,311
6	Roadway Pavement	3,700	SF	\$15	\$55,500
7	Minor Concrete (New Driveway)	-	SF	\$25	\$0
8	Minor Concrete (Type A2 Curb and Gutter)	200	LF	\$35	\$7,000
9	Minor Concrete (Type A1 Curbs)	-	LF	\$20	\$0
10	Minor Concrete (Concrete Barrier)	-	LF	\$150	\$0
11	Remove Metal Beam Gaurdrail	-	LF	\$30	\$0
12	Remove Drainage Inlet	-	EA	\$2,000	\$0
13	Minor Concrete (Mountable Curb - Truck Apron)	-	LF	\$25	\$0
14	Minor Concrete (Sidewalk)	-	SF	\$15	\$0
15	Minor Concrete (Truck Apron, stamped, colored)	-	SF	\$40	\$0
16	ADA Curb Ramp	-	EA	\$3,000	\$0
17	Hardscaping	-	SF	\$12	\$0
18	Landscaping/Clean water features	-	SF	\$45	\$0
19	Thermoplastic Pavement Marking	525	SF	\$6	\$3,150
20	Thermoplastic Traffic Stripe (White)	2,800	LF	\$2	\$5,600
21	Thermoplastic Traffic Stripe (Yellow)	-	LF	\$2	\$0
22	Green Pavement Marking	-	SF	\$12	\$0
23	Roadside Signs	6	EA	\$500	\$3,000
24	RRFB	-	EA	\$12,000	\$0
25	Speed Feedback Signs	-	EA	\$5,000	\$0
26	Traffic Signal and Lighting - SB Ramps	1	LS	\$211,000	\$211,000
27	Traffic Signal and Lighting - NB Ramps	1	LS	\$219,000	\$219,000
28	Utilities (5% of project items)	1	LS	\$8,200	\$8,200
29	Drainage (5% of project items)	1	LS	\$8,200	\$8,200
30	Lighting and Electrical (3% of project items)	0	LS		\$0
31	Mobilization (10% of project items)	1	LS	\$16,300	\$16,300
				<b>Construction Sub-Total</b>	<b>\$625,261</b>
				<b>40% Contingency</b>	<b>\$250,104</b>
				<b>Construction Total</b>	<b>\$875,400</b>
	RIGHT OF WAY ACQUISITION	-	SF	\$100	\$0
	ENGINEERING/DESIGN (20% OF CONSTRUCTION COST)	1	LS	\$175,080	\$175,080
	ENVIRONMENTAL (10% OF CONSTRUCTION COST)	1	LS	\$87,540	\$87,540
	CONSTRUCTION MANAGEMENT (15% OF CONSTRUCTION COST)	1	LS	\$131,310	\$131,310
	PERMITTING (10% OF CONSTRUCTION COST)	1	LS	\$87,540	\$87,540
				<b>Other Project Costs Total =</b>	<b>\$481,500</b>
				<b>GRAND TOTAL =</b>	<b>\$1,356,900</b>

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## ALPINE ROAD CORRIDOR STUDY

## Phase 2 - Left Turn Lanes, bike slot and right turn widening at Piers Lane/Alpine Access Road

Engineer's Opinion of Probable Cost  
October 2016

Item	Description	Quantity	Unit	Unit Cost	Total
1	Traffic Control	1	LS	\$10,000	\$10,000
2	Erosion Control	1	LS	\$3,000	\$3,000
3	Clearing and Grubbing	0	LS	\$5,000	\$0
4	Tree Removal	0	EA	\$500	\$0
5	Roadway Excavation (Includes removal of sidewalk, curb/gutter, etc.)	306	CY	\$40	\$12,222
6	Roadway Pavement	2,750	SF	\$15	\$41,250
7	Minor Concrete (New Driveway)	-	SF	\$25	\$0
8	Minor Concrete (Type A2 Curb and Gutter)	-	LF	\$35	\$0
9	Minor Concrete (Type A1 Curbs)	-	LF	\$20	\$0
10	Minor Concrete (Mountable Curb - Truck Apron)	-	LF	\$25	\$0
11	Minor Concrete (Sidewalk)	-	SF	\$15	\$0
12	Minor Concrete (Truck Apron, stamped, colored)	-	SF	\$40	\$0
13	ADA Curb Ramp	-	EA	\$3,000	\$0
14	Hardscaping	-	SF	\$12	\$0
15	Landscaping/Clean water features	-	SF	\$45	\$0
16	Thermoplastic Pavement Marking	-	SF	\$6	\$0
17	Thermoplastic Traffic Stripe (White)	800	LF	\$2	\$1,600
18	Thermoplastic Traffic Stripe (Yellow)	2,000	LF	\$2	\$4,000
19	Green Pavement Marking	700	SF	\$12	\$8,400
20	Roadside Signs	4	EA	\$500	\$2,000
21	RRFB	-	EA	\$12,000	\$0
22	Speed Feedback Signs	-	EA	\$5,000	\$0
23	Slurry Seal	33,100	SF	\$1	\$33,100
24	Utilities (5% of project items)	0	LS		\$0
25	Drainage (5% of project items)	1	LS	\$11,600	\$11,600
26	Lighting and Electrical (3% of project items)	0	LS		\$0
27	Mobilization (10% of project items)	1	LS	\$11,600	\$11,600
				<b>Construction Sub-Total</b>	<b>\$138,772</b>
				<b>40% Contingency</b>	<b>\$55,509</b>
				<b>Construction Total</b>	<b>\$194,300</b>
	RIGHT OF WAY ACQUISITION	-	SF	\$100	\$0
	ENGINEERING/DESIGN (18% OF CONSTRUCTION COST)	1	LS	\$34,974	\$34,974
	ENVIRONMENTAL (5% OF CONSTRUCTION COST)	1	LS	\$9,715	\$9,715
	CONSTRUCTION MANAGEMENT (15% OF CONSTRUCTION COST)	1	LS	\$29,145	\$29,145
	PERMITTING (2% OF CONSTRUCTION COST)	1	LS	\$3,886	\$3,886
				<b>Other Project Costs Total =</b>	<b>\$77,700</b>
				<b>GRAND TOTAL =</b>	<b>\$272,000</b>

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## ALPINE ROAD CORRIDOR STUDY

## Phase 2 - Removal of free-right turns at southbound off-ramp

Engineer's Opinion of Probable Cost  
October 2016

Item	Description	Quantity	Unit	Unit Cost	Total
1	Traffic Control	1	LS	\$25,000	\$25,000
2	Erosion Control	1	LS	\$10,000	\$10,000
3	Clearing and Grubbing	1	LS	\$5,000	\$5,000
4	Tree Removal	0	EA	\$500	\$0
5	Roadway Excavation (Includes removal of sidealk, curb/gutter, etc.)	1,144	CY	\$40	\$45,756
6	Roadway Pavement	3,065	SF	\$15	\$45,975
7	Remove Existing Structure	-	SF	\$180	\$0
8	Minor Concrete (New Driveway)	-	SF	\$25	\$0
9	Minor Concrete (Type A2 Curb and Gutter)	670	LF	\$35	\$23,450
10	Minor Concrete (Type A1 Curbs)	-	LF	\$20	\$0
11	Minor Concrete (Concrete Barrier)	-	LF	\$150	\$0
12	Remove Metal Beam Gaurdrail	-	LF	\$30	\$0
13	Remove Drainage Inlet	-	EA	\$2,000	\$0
14	Minor Concrete (Mountable Curb - Truck Apron)	-	LF	\$25	\$0
15	Minor Concrete (Sidewalk)	-	SF	\$15	\$0
16	Minor Concrete (Truck Apron, stamped, colored)	-	SF	\$40	\$0
17	ADA Curb Ramp	-	EA	\$3,000	\$0
18	Hardscaping	-	SF	\$12	\$0
19	Landscaping/Clean water features	-	SF	\$45	\$0
20	Thermoplastic Pavement Marking	-	SF	\$6	\$0
21	Thermoplastic Traffic Stripe (White)	-	LF	\$2	\$0
22	Thermoplastic Traffic Stripe (Yellow)	-	LF	\$2	\$0
23	Green Pavement Marking	-	SF	\$12	\$0
24	Roadside Signs	2	EA	\$500	\$1,000
25	RRFB	-	EA	\$12,000	\$0
26	Speed Feedback Signs	-	EA	\$5,000	\$0
27	Utilities (5% of project items)	0	LS	\$7,900	\$0
28	Drainage (5% of project items)	1	LS	\$7,900	\$7,900
29	Lighting and Electrical (3% of project items)	0	LS	\$4,700	\$0
30	Mobilization (10% of project items)	1	LS	\$15,700	\$15,700
				<b>Construction Sub-Total</b>	<b>\$179,781</b>
				<b>40% Contingency</b>	<b>\$71,912</b>
				<b>Construction Total</b>	<b>\$251,700</b>
	RIGHT OF WAY ACQUISITION	-	SF	\$100	\$0
	ENGINEERING/DESIGN (20% OF CONSTRUCTION COST)	1	LS	\$50,340	\$50,340
	ENVIRONMENTAL (10% OF CONSTRUCTION COST)	1	LS	\$25,170	\$25,170
	CONSTRUCTION MANAGEMENT (15% OF CONSTRUCTION COST)	1	LS	\$37,755	\$37,755
	PERMITTING (10% OF CONSTRUCTION COST)	1	LS	\$25,170	\$25,170
				<b>Other Project Costs Total =</b>	<b>\$138,400</b>
				<b>GRAND TOTAL =</b>	<b>\$390,100</b>

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## ALPINE ROAD CORRIDOR STUDY

Phase 2 - Extend NB Ramp Merge  
Engineer's Opinion of Probable Cost  
October 2016

Item	Description	Quantity	Unit	Unit Cost	Total
1	Traffic Control	1	LS	\$15,000	\$15,000
2	Erosion Control	1	LS	\$5,000	\$5,000
3	Clearing and Grubbing	1	LS	\$5,000	\$5,000
4	Tree Removal	5	EA	\$500	\$2,500
5	Roadway Excavation (Includes removal of sidealk, curb/gutter, etc.)	1,517	CY	\$60	\$91,000
6	Roadway Pavement	4,343	SF	\$15	\$65,145
7	HMA Dike	550	LF	\$15	\$8,250
8	Minor Concrete (Type A2 Curb and Gutter)	-	LF	\$35	\$0
9	Minor Concrete (Type A1 Curbs)	207	LF	\$20	\$4,140
10	Minor Concrete (Mountable Curb - Truck Apron)	-	LF	\$25	\$0
11	Minor Concrete (Sidewalk)	-	SF	\$15	\$0
12	Minor Concrete (Truck Apron, stamped, colored)	-	SF	\$40	\$0
13	ADA Curb Ramp	-	EA	\$3,000	\$0
14	Hardscaping	-	SF	\$12	\$0
15	Landscaping/Clean water features	-	SF	\$45	\$0
16	Thermoplastic Pavement Marking	-	SF	\$6	\$0
17	Thermoplastic Traffic Stripe (White)	1,222	LF	\$2	\$2,444
18	Thermoplastic Traffic Stripe (Yellow)	287	LF	\$2	\$574
19	Green Pavement Marking	-	SF	\$12	\$0
20	Roadside Signs	-	EA	\$500	\$0
21	RRFB	-	EA	\$12,000	\$0
22	Speed Feedback Signs	-	EA	\$5,000	\$0
23	Retaining Wall (Caltrans Type 1A - assume max H=6')	280	LF	\$430	\$120,400
24	Slurry Seal	12,150	SF	\$1	\$12,150
25	Utilities (5% of project items)		LS		\$0
26	Drainage (5% of project items)	1	LS	\$16,600	\$16,600
27	Lighting and Electrical (3% of project items)		LS		\$0
28	Mobilization (10% of project items)	1	LS	\$33,200	\$33,200
				<b>Construction Sub-Total</b>	<b>\$381,403</b>
				<b>40% Contingency</b>	<b>\$152,561</b>
				<b>Construction Total</b>	<b>\$534,000</b>
	RIGHT OF WAY ACQUISITION		SF	\$100	\$0
	ENGINEERING/DESIGN (20% OF CONSTRUCTION COST)	1	LS	\$106,800	\$106,800
	ENVIRONMENTAL (10% OF CONSTRUCTION COST)	1	LS	\$53,400	\$53,400
	CONSTRUCTION MANAGEMENT (15% OF CONSTRUCTION COST)	1	LS	\$80,100	\$80,100
	PERMITTING (10% OF CONSTRUCTION COST)	1	LS	\$53,400	\$53,400
				<b>Other Project Costs Total =</b>	<b>\$293,700</b>
				<b>GRAND TOTAL =</b>	<b>\$827,700</b>

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## ALPINE ROAD CORRIDOR STUDY

## Phase 2 - Removal of free southbound on-ramp from NB Alpine Rd

Engineer's Opinion of Probable Cost  
October 2016

Item	Description	Quantity	Unit	Unit Cost	Total
1	Traffic Control	1	LS	\$25,000	\$25,000
2	Erosion Control	1	LS	\$10,000	\$10,000
3	Clearing and Grubbing	1	LS	\$5,000	\$5,000
4	Tree Removal	0	EA	\$500	\$0
5	Roadway Excavation (Includes removal of sidealk, curb/gutter, etc.)	2,220	CY	\$60	\$133,222
6	Roadway Pavement	15,000	SF	\$15	\$225,000
7	Remove Existing Structure	1,500	SF	\$180	\$270,000
8	Minor Concrete (New Driveway)	-	SF	\$25	\$0
9	Minor Concrete (Type A2 Curb and Gutter)	450	LF	\$35	\$15,750
10	Minor Concrete (Type A1 Curbs)	660	LF	\$20	\$13,200
11	Minor Concrete (Concrete Barrier)	-	LF	\$150	\$0
12	Remove Metal Beam Gaurdrail	190	LF	\$30	\$5,700
13	Remove Drainage Inlet	2	EA	\$2,000	\$4,000
14	Minor Concrete (Mountable Curb - Truck Apron)	-	LF	\$25	\$0
15	Minor Concrete (Sidewalk)	-	SF	\$15	\$0
16	Minor Concrete (Truck Apron, stamped, colored)	-	SF	\$40	\$0
17	ADA Curb Ramp	-	EA	\$3,000	\$0
18	Hardscaping	-	SF	\$12	\$0
19	Landscaping/Clean water features	-	SF	\$45	\$0
20	Thermoplastic Pavement Marking	-	SF	\$6	\$0
21	Thermoplastic Traffic Stripe (White)	-	LF	\$2	\$0
22	Thermoplastic Traffic Stripe (Yellow)	-	LF	\$2	\$0
23	Green Pavement Marking	-	SF	\$12	\$0
24	Roadside Signs	-	EA	\$500	\$0
25	RRFB	-	EA	\$12,000	\$0
26	Speed Feedback Signs	-	EA	\$5,000	\$0
27	Utilities (5% of project items)	0	LS	\$35,400	\$0
28	Drainage (5% of project items)	1	LS	\$35,400	\$35,400
29	Lighting and Electrical (3% of project items)	0	LS	\$21,300	\$0
30	Mobilization (10% of project items)	1	LS	\$70,700	\$70,700
				<b>Construction Sub-Total</b>	<b>\$812,972</b>
				<b>40% Contingency</b>	<b>\$325,189</b>
				<b>Construction Total</b>	<b>\$1,138,200</b>
	RIGHT OF WAY ACQUISITION	-	SF	\$100	\$0
	ENGINEERING/DESIGN (20% OF CONSTRUCTION COST)	1	LS	\$227,640	\$227,640
	ENVIRONMENTAL (10% OF CONSTRUCTION COST)	1	LS	\$113,820	\$113,820
	CONSTRUCTION MANAGEMENT (15% OF CONSTRUCTION COST)	1	LS	\$170,730	\$170,730
	PERMITTING (10% OF CONSTRUCTION COST)	1	LS	\$113,820	\$113,820
				<b>Other Project Costs Total =</b>	<b>\$626,000</b>
				<b>GRAND TOTAL =</b>	<b>\$1,764,200</b>

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## ALPINE ROAD CORRIDOR STUDY

**Phase 2 - Consolidated Driveway Access at Wildwood Ln**  
 Engineer's Opinion of Probable Cost  
 October 2016

Item	Description	Quantity	Unit	Unit Cost	Total
1	Traffic Control	1	LS	\$30,000	\$30,000
2	Erosion Control	1	LS	\$10,000	\$10,000
3	Clearing and Grubbing	1	LS	\$5,000	\$5,000
4	Tree Removal	2	EA	\$1,000	\$2,000
5	Roadway Excavation (Includes removal of sidealk, curb/gutter, etc.)	2,114	CY	\$40	\$84,573
6	Roadway Pavement	10,250	SF	\$15	\$153,750
7	Minor Concrete (New Driveway)	582	SF	\$25	\$14,550
8	Minor Concrete (Type A2 Curb and Gutter)	1,087	LF	\$35	\$38,045
9	Minor Concrete (Type A1 Curbs)	-	LF	\$20	\$0
10	Minor Concrete (Mountable Curb - Truck Apron)	-	LF	\$25	\$0
11	Minor Concrete (Sidewalk)	-	SF	\$15	\$0
12	Minor Concrete (Truck Apron, stamped, colored)	-	SF	\$40	\$0
13	ADA Curb Ramp	-	EA	\$3,000	\$0
14	Hardscaping	-	SF	\$12	\$0
15	Landscaping/Clean water features	7,110	SF	\$35	\$248,850
16	Thermoplastic Pavement Marking	-	SF	\$6	\$0
17	Thermoplastic Traffic Stripe (White)	900	LF	\$2	\$1,800
18	Thermoplastic Traffic Stripe (Yellow)	974	LF	\$2	\$1,948
19	Green Pavement Marking	435	SF	\$12	\$5,220
20	Roadside Signs	-	EA	\$500	\$0
21	RRFB	-	EA	\$12,000	\$0
22	Speed Feedback Signs	1	EA	\$5,000	\$5,000
23	Slurry Seal	46,000	SF	\$1	\$46,000
24	Relocate AT&T Cellular Site	1	LS	\$100,000	\$100,000
25	Utilities (5% of project items)	1	LS	\$32,400	\$32,400
26	Drainage (5% of project items)	1	LS	\$32,400	\$32,400
27	Lighting and Electrical (3% of project items)	1	LS	\$19,500	\$19,500
28	Mobilization (10% of project items)	1	LS	\$64,700	\$64,700
				<b>Construction Sub-Total</b>	<b>\$895,736</b>
				<b>40% Contingency</b>	<b>\$358,295</b>
				<b>Construction Total</b>	<b>\$1,254,100</b>
	RIGHT OF WAY ACQUISITION	-	SF	\$100	\$0
	ENGINEERING/DESIGN (18% OF CONSTRUCTION COST)	1	LS	\$225,738	\$225,738
	ENVIRONMENTAL (5% OF CONSTRUCTION COST)	1	LS	\$62,705	\$62,705
	CONSTRUCTION MANAGEMENT (15% OF CONSTRUCTION COST)	1	LS	\$188,115	\$188,115
	PERMITTING (2% OF CONSTRUCTION COST)	1	LS	\$25,082	\$25,082
				<b>Other Project Costs Total =</b>	<b>\$501,600</b>
				<b>GRAND TOTAL =</b>	<b>\$1,755,700</b>

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## ALPINE ROAD CORRIDOR STUDY

## Phase 2 - On-Street Path Extension to Stowe Ln

Engineer's Opinion of Probable Cost  
October 2016

Item	Description	Quantity	Unit	Unit Cost	Total
1	Traffic Control	1	LS	\$10,000	\$10,000
2	Erosion Control	1	LS	\$3,000	\$3,000
3	Clearing and Grubbing	1	LS	\$5,000	\$5,000
4	Tree Removal	4	EA	\$1,000	\$4,000
5	Roadway Excavation (Includes removal of sidealk, curb/gutter, etc.)	553	CY	\$60	\$33,164
6	Roadway Pavement	7,462	SF	\$15	\$111,930
7	Minor Concrete (New Driveway)	-	SF	\$25	\$0
8	Minor Concrete (Type A2 Curb and Gutter)	-	LF	\$35	\$0
9	Minor Concrete (Type A1 Curbs)	-	LF	\$20	\$0
10	Minor Concrete (Mountable Curb - Truck Apron)	-	LF	\$25	\$0
11	Minor Concrete (Sidewalk)	-	SF	\$15	\$0
12	Minor Concrete (Truck Apron, stamped, colored)	-	SF	\$40	\$0
13	ADA Curb Ramp	-	EA	\$3,000	\$0
14	Hardscaping	-	SF	\$12	\$0
15	Landscaping/Clean water features	-	SF	\$45	\$0
16	Thermoplastic Pavement Marking	-	SF	\$6	\$0
17	Thermoplastic Traffic Stripe (White)	300	LF	\$2	\$600
18	Thermoplastic Traffic Stripe (Yellow)	-	LF	\$2	\$0
19	Green Pavement Marking	110	SF	\$12	\$1,320
20	Roadside Signs	1	EA	\$500	\$500
21	RRFB	-	EA	\$12,000	\$0
22	Speed Feedback Signs	-	EA	\$5,000	\$0
23	Channelizers (Surface Mounted)	60	EA	\$100	\$6,000
23	Retaining Wall (Caltrans Type 1A - assume max H=4')	160	LF	\$350	\$56,000
24	Utilities (5% of project items)	0	LS		\$0
25	Drainage (10% of project items)	1	LS	\$23,200	\$23,200
26	Lighting and Electrical (3% of project items)	0	LS		\$0
27	Mobilization (10% of project items)	1	LS	\$23,200	\$23,200
				<b>Construction Sub-Total</b>	<b>\$277,914</b>
				<b>40% Contingency</b>	<b>\$111,166</b>
				<b>Construction Total</b>	<b>\$389,100</b>
	RIGHT OF WAY ACQUISITION	-	SF	\$100	\$0
	ENGINEERING/DESIGN (25% OF CONSTRUCTION COST)	1	LS	\$97,275	\$97,275
	ENVIRONMENTAL (5% OF CONSTRUCTION COST)	1	LS	\$19,455	\$19,455
	CONSTRUCTION MANAGEMENT (15% OF CONSTRUCTION COST)	1	LS	\$58,365	\$58,365
	PERMITTING (2% OF CONSTRUCTION COST)	1	LS	\$7,782	\$7,782
				<b>Other Project Costs Total =</b>	<b>\$182,900</b>
				<b>GRAND TOTAL =</b>	<b>\$572,000</b>

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known at the time of the opinion.

## ALPINE ROAD CORRIDOR STUDY

## Alternative Phase 2 - Two Way Left-Turn Lane Median at Wildwood Ln

Engineer's Opinion of Probable Cost  
October 2016

Item	Description	Quantity	Unit	Unit Cost	Total
1	Traffic Control	1	LS	\$10,000	\$10,000
2	Erosion Control	1	LS	\$3,000	\$3,000
3	Clearing and Grubbing	0	LS	\$5,000	\$0
4	Tree Removal	0	EA	\$500	\$0
5	Roadway Excavation (Includes removal of sidealk, curb/gutter, etc.)	3,040	CY	\$40	\$121,618
6	Roadway Pavement	26,710	SF	\$15	\$400,650
7	Minor Concrete (New Driveway)	-	SF	\$25	\$0
8	Minor Concrete (Type A2 Curb and Gutter)	900	LF	\$35	\$31,500
9	Minor Concrete (Type A1 Curbs)	-	LF	\$20	\$0
10	Minor Concrete (Mountable Curb - Truck Apron)	-	LF	\$25	\$0
11	Minor Concrete (Sidewalk)	654	SF	\$15	\$9,810
12	Minor Concrete (Truck Apron, stamped, colored)	-	SF	\$40	\$0
13	ADA Curb Ramp	-	EA	\$3,000	\$0
14	Hardscaping	-	SF	\$12	\$0
15	Landscaping/Clean water features	-	SF	\$45	\$0
16	Thermoplastic Pavement Marking	-	SF	\$6	\$0
17	Thermoplastic Traffic Stripe (White)	1,768	LF	\$2	\$3,536
18	Thermoplastic Traffic Stripe (Yellow)	954	LF	\$2	\$1,908
19	Green Pavement Marking	825	SF	\$12	\$9,900
20	Roadside Signs	1	EA	\$500	\$500
21	RRFB	-	EA	\$12,000	\$0
22	Speed Feedback Signs	-	EA	\$5,000	\$0
23	Slurry Seal	46,000	SF	\$1	\$46,000
24	Utilities (5% of project items)	0	LS		\$0
25	Drainage (5% of project items)	1	LS	\$63,900	\$63,900
26	Lighting and Electrical (3% of project items)	0	LS		\$0
27	Mobilization (10% of project items)	1	LS	\$63,900	\$63,900
				<b>Construction Sub-Total</b>	<b>\$766,222</b>
				<b>40% Contingency</b>	<b>\$306,489</b>
				<b>Construction Total</b>	<b>\$1,072,800</b>
	RIGHT OF WAY ACQUISITION	-	SF	\$100	\$0
	ENGINEERING/DESIGN (18% OF CONSTRUCTION COST)	1	LS	\$193,104	\$193,104
	ENVIRONMENTAL (5% OF CONSTRUCTION COST)	1	LS	\$53,640	\$53,640
	CONSTRUCTION MANAGEMENT (15% OF CONSTRUCTION COST)	1	LS	\$160,920	\$160,920
	PERMITTING (2% OF CONSTRUCTION COST)	1	LS	\$21,456	\$21,456
				<b>Other Project Costs Total =</b>	<b>\$429,100</b>
				<b>GRAND TOTAL =</b>	<b>\$1,501,900</b>

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- Two-Way Left Turn Lane improvements assumed to be from 350' south of Wildwood to Stowe Lane

## ALPINE ROAD CORRIDOR STUDY

## Phase 2 - Extend Acceleration Lanes and/or Turn Pockets

Engineer's Opinion of Probable Cost  
October 2016

Item	Description	Quantity	Unit	Unit Cost	Total
1	Traffic Control	1	LS	\$15,000	\$15,000
2	Erosion Control	1	LS	\$5,000	\$5,000
3	Clearing and Grubbing	1	LS	\$2,000	\$2,000
4	Tree Removal	0	EA	\$500	\$0
5	Roadway Excavation (Includes removal of sidealk, curb/gutter, etc.)	667	CY	\$60	\$40,000
6	Roadway Pavement	6,000	SF	\$15	\$90,000
7	Minor Concrete (New Driveway)	-	SF	\$25	\$0
8	Minor Concrete (Type A2 Curb and Gutter)	802	LF	\$35	\$28,070
9	Minor Concrete (Type A1 Curbs)	-	LF	\$20	\$0
10	Minor Concrete (Mountable Curb - Truck Apron)	-	LF	\$25	\$0
11	Minor Concrete (Sidewalk)	-	SF	\$15	\$0
12	Minor Concrete (Truck Apron, stamped, colored)	-	SF	\$40	\$0
13	ADA Curb Ramp	-	EA	\$3,000	\$0
14	Hardscaping	-	SF	\$12	\$0
15	Landscaping/Clean water features	-	SF	\$45	\$0
16	Thermoplastic Pavement Marking	72	SF	\$6	\$432
17	Thermoplastic Traffic Stripe (White)	1,088	LF	\$2	\$2,176
18	Thermoplastic Traffic Stripe (Yellow)	484	LF	\$2	\$968
19	Green Pavement Marking	910	SF	\$12	\$10,920
20	Roadside Signs	-	EA	\$500	\$0
21	RRFB	-	EA	\$12,000	\$0
22	Speed Feedback Signs	-	EA	\$5,000	\$0
23	Slurry Seal	50,000	SF	\$1	\$50,000
24	Utilities (5% of project items)	0	LS		\$0
25	Drainage (5% of project items)	1	LS	\$12,300	\$12,300
26	Lighting and Electrical (3% of project items)	0	LS		\$0
27	Mobilization (10% of project items)	1	LS	\$24,500	\$24,500
				<b>Construction Sub-Total</b>	<b>\$281,366</b>
				<b>40% Contingency</b>	<b>\$112,546</b>
				<b>Construction Total</b>	<b>\$394,000</b>
	RIGHT OF WAY ACQUISITION	-	SF	\$100	\$0
	ENGINEERING/DESIGN (18% OF CONSTRUCTION COST)	1	LS	\$70,920	\$70,920
	ENVIRONMENTAL (5% OF CONSTRUCTION COST)	1	LS	\$19,700	\$19,700
	CONSTRUCTION MANAGEMENT (15% OF CONSTRUCTION COST)	1	LS	\$59,100	\$59,100
	PERMITTING (2% OF CONSTRUCTION COST)	1	LS	\$7,880	\$7,880
				<b>Other Project Costs Total =</b>	<b>\$157,600</b>
				<b>GRAND TOTAL =</b>	<b>\$551,600</b>

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- Extend Acceleration Lanes and Turn Pockets assumed to be at Bishop Lane and Stowe Lane.

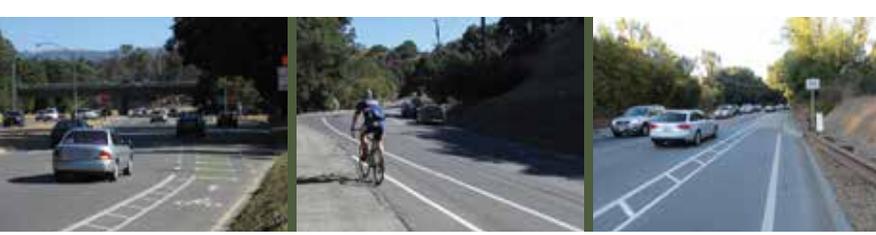
## ALPINE ROAD CORRIDOR STUDY

## Phase 2 - Improve NB Bus Stop and Stop Near Stowe Lane

Engineer's Opinion of Probable Cost  
October 2016

Item	Description	Quantity	Unit	Unit Cost	Total
1	Traffic Control	1	LS	\$10,000	\$10,000
2	Erosion Control	1	LS	\$5,000	\$5,000
3	Clearing and Grubbing	1	LS	\$2,000	\$2,000
4	Tree Removal	0	EA	\$500	\$0
5	Roadway Excavation (Includes removal of sidewalk, curb/gutter, etc.)	122	CY	\$60	\$7,333
6	Roadway Pavement	1,100	SF	\$15	\$16,500
7	Minor Concrete (New Driveway)	-	SF	\$25	\$0
8	Minor Concrete (Type A2 Curb and Gutter)	-	LF	\$35	\$0
9	Minor Concrete (Type A1 Curbs)	-	LF	\$20	\$0
10	HMA Dike	200	LF	\$15	\$3,000
11	Minor Concrete (Sidewalk)	-	SF	\$15	\$0
12	Minor Concrete (Truck Apron, stamped, colored)	-	SF	\$40	\$0
13	ADA Curb Ramp	-	EA	\$3,000	\$0
14	Hardscaping	-	SF	\$12	\$0
15	Landscaping/Clean water features	-	SF	\$45	\$0
16	Thermoplastic Pavement Marking	-	SF	\$6	\$0
17	Thermoplastic Traffic Stripe (White)	200	LF	\$2	\$400
18	Thermoplastic Traffic Stripe (Yellow)	-	LF	\$2	\$0
19	Green Pavement Marking	-	SF	\$12	\$0
20	Roadside Signs	-	EA	\$500	\$0
21	RRFB	-	EA	\$12,000	\$0
22	Speed Feedback Signs	-	EA	\$5,000	\$0
23	Bus Stop Amenities	1	LS	\$10,000	\$10,000
24	Utilities (5% of project items)	0	LS		\$0
25	Drainage (5% of project items)	1	LS	\$2,800	\$2,800
26	Lighting and Electrical (3% of project items)	0	LS		\$0
27	Mobilization (10% of project items)	1	LS	\$5,500	\$5,500
				<b>Construction Sub-Total</b>	<b>\$62,533</b>
				<b>40% Contingency</b>	<b>\$25,013</b>
				<b>Construction Total</b>	<b>\$87,600</b>
	RIGHT OF WAY ACQUISITION	-	SF	\$100	\$0
	ENGINEERING/DESIGN (25% OF CONSTRUCTION COST)	1	LS	\$21,900	\$21,900
	ENVIRONMENTAL (5% OF CONSTRUCTION COST)	1	LS	\$4,380	\$4,380
	CONSTRUCTION MANAGEMENT (15% OF CONSTRUCTION COST)	1	LS	\$13,140	\$13,140
	PERMITTING (2% OF CONSTRUCTION COST)	1	LS	\$1,752	\$1,752
				<b>Other Project Costs Total =</b>	<b>\$41,200</b>
				<b>GRAND TOTAL =</b>	<b>\$128,800</b>

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# Alpine Road

## CORRIDOR STUDY PROJECT

## Appendix G

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### Cost Estimate Technical Memorandum



## MEMORANDUM - DRAFT

To: Hanieh Houshmandi, Project Manager  
County of San Mateo

From: Adam Dankberg, P.E. and Daniel Carley, P.E.  
Kimley-Horn and Associates, Inc.

Date: October 6, 2016

Subject: Alpine Road Corridor Study - Draft Cost Estimates for Conceptual Improvements

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### Overview

This memorandum summarizes the cost estimating process and potential implementation challenges for the conceptual improvements proposed as part of the Alpine Road Corridor Study. The projects included in this memorandum reflect the current slate of Phase 1 and Phase 2 improvements as determined by County staff and Kimley-Horn through community input and technical analyses. The project team coordinated with the City of Menlo Park and Stanford University during the process of identifying improvements and phasing.

### Development of Improvements and Phasing

Kimley-Horn and County staff developed five corridor alternatives that included numerous improvements with various levels of construction cost and complexity. These alternatives were presented to the community at a meeting held on January 21, 2016, and were also discussed at a field walk with the nearby residents on June 10, 2016. Based on community input and technical analyses, County staff and Kimley-Horn developed a refined list of improvements. Each improvement was identified as a Phase 1 or Phase 2 improvement.

Phase 1 improvements are intended to be lower cost options to improve comfort and accessibility for auto, bicycle, transit, and pedestrian users of Alpine Road. These projects may fit within the limited budget currently available for County roadway improvement projects and are associated with relatively minimal implementation challenges.

Phase 2 improvements are projects that may be more complex and/or require funding not currently available to the County. These projects will likely have a longer lead time to implementation associated with funding identification and, in several cases, a requirement for detailed environmental analysis.

## Opinions of Probable Costs

Draft opinions of probable costs were prepared for each improvement under consideration. These opinions are based on a conceptual level of design. This project did not include any topographical survey, subsurface investigation of utilities, or geotechnical studies. Therefore, these opinions are very preliminary in nature and subject to significant refinement through further design development and analysis. Estimates of project development costs such as design, environmental analysis, and project administration are included in the ranges given.

Reflective of the preliminary nature of the concept development conducted thus far, a 40 percent contingency factor was applied to all estimates. The contingency amount allows for potential increases upon further design development and data collection. However, the opinions provided are just an estimate and not an upper bound on the magnitude of potential improvement costs. Unit costs were obtained from similar past projects and reflect Year 2016 Dollars. Costs at time of implementation may be higher.

## Implementation Feasibility and Potential Challenges

For each of the proposed improvements, the list below identifies items that may present challenges to implementation, including risk factor items that could affect the final costs and/or timeframe for implementation.

### SEGMENT 1 – LADERA

#### Phase 1

- **Enhance/Shift crosswalk south of La Mesa Drive**
  - Coordination with private owners for disruptions during construction
- **General path widening**
  - Does not include widening at choke points at various locations where San Francisquito Creek meanders towards Alpine Rd
  - May require additional environmental studies and mitigations
    - Potential for Section 404F permit (Diminimus finding) for path reconstruction
- **Bike slots at intersections and green paint in conflict areas**
  - Cost estimate includes slurry seal for full roadway width in areas requiring re-striping
- **Remove crosswalk at San Francisquito Creek Rd**
  - Notification of the public is required
- **Install pedestrian lighting and RRFBs at crosswalks at La Mesa Drive and La Cuesta Drive**
- **Install speed feedback signs in four locations**

## Phase 2

- **Buffered bike lanes**
  - Cost estimate includes slurry seal for full roadway width in areas requiring re-striping
- **Roundabout at La Mesa Drive**
  - Potential significant environmental impact due to proximity to the San Francisquito Creek
  - Right-of-way acquisition
  - Utility relocations require coordination with owners (PG&E)
  - Potential modifications to parking and drive aisle configuration on private property
  - Reconfiguration or closure of an access driveway to an adjacent parcel
  - Reconfiguration/relocation of existing Jeep Trail access driveway
- **Restrict shopping center driveway access**
  - Coordination with shopping center owner and tenants
  - Coordination with fire department on access and circulation
- **Roundabout at La Cuesta Drive**
  - Potential significant environmental impact due to proximity to the San Francisquito Creek
  - Right-of-way acquisition
  - Tree removals may trigger additional environmental study
  - Utility relocations require coordination with owners (PG&E)
  - Relocation of existing monument sign
  - Requires restriction of gas station exit at La Cuesta Drive (identified separately here)
- **Restrict gas station exit at La Cuesta Drive**
  - Coordination with gas station owner and fuel delivery company
- **Narrowing median to provide turn lanes on La Cuesta Drive**
  - Limited removal of existing landscaping
  - Discuss improvement with nearby homeowners

## **SEGMENT 2 - I-280 TO PIERS LANE**

### Phase 1

- **Buffered bike lane extension**

### Phase 2

- **Signals at I-280 ramps (includes square-up of free-rights)**
  - Intersection Control Evaluation (ICE) study required
  - Caltrans involvement, potentially through the encroachment permit process
- **Roundabouts at I-280 ramps**
  - Intersection Control Evaluation (ICE) study required
  - Significant Caltrans involvement in review/approval process
  - Potential effects on creek due to regrading

- Extensive environmental study required due to extents of improvements
- Significant disturbance to motorists and cyclists during construction
- **Left-turn lanes and bike slot at Piers Lane**
  - Cost estimate includes slurry seal for full roadway width in areas requiring re-stripping
- **Dish Trail/Piers Lane parking lot modification**
  - Formalized parking may require community outreach
  - New barrier, signage and/or additional enforcement required to remove parking currently on Stanford land
- **Removal of free SB on-ramp from Northbound Alpine Rd**
  - Potential environmental impacts related to removing the structure over the creek
  - Would be incorporated as part of signalization project
- **Conversion of southbound off-ramp free-right turn to stop control**
  - Coordination with Caltrans required
- **Extend northbound on-ramp merge**
  - Caltrans involvement, likely through the encroachment permit process
  - Widening will likely require a retaining wall and removal of several trees

## SEGMENT 3 - STANFORD WEEKEND ACRES

### Phase 1

- **Mark “Keep Clear” zones**
- **Green paint in bike lanes at conflict areas**
- **Install speed feedback signs in two locations**
- **Clear vegetation for sight distance improvements**
  - Cost reflects ongoing maintenance cost
- **Install crosswalk and ADA curb ramps across Bishop Lane**
- **Extend guardrail or other channelization south of Bishop Lane**
- **Shift Alpine Road alignment near Stowe Lane to widen bike lane to 5 feet**
  - Cost estimate includes slurry seal for full roadway width in areas requiring re-stripping

### Phase 2

- **Consolidated driveway access at Wildwood Lane**
  - Coordination with residents
  - AT&T cellular site relocation
  - Coordination with trash collection provider on access and circulation
  - Coordination with fire department on access and circulation
  - Potential for tree removal and grading to improve sight distance
- **Two-way left-turn lane median at Wildwood Lane**
- **On-street path extension to Stowe Lane**

- Develop design to minimize effect on trees and slope
- **Extend acceleration lanes and turn pockets (Stowe and Bishop Lanes)**
  - Cost estimate includes slurry seal for full roadway width in areas requiring re-stripping
- **Improve northbound bus pullout and stop north of Stowe Lane**
  - Includes stop amenities, improved pavement, and passenger waiting area

### **Improvements within Caltrans Right of Way (Segment 2)**

The improvements that are within Caltrans right-of-way will require additional coordination and review by Caltrans. The proposed minor improvements will likely be able to be processed through the encroachment permit process (projects with construction cost less than \$1 million) with an approximate duration of six to nine months, dependent on the level of environmental documents.

The more significant signal improvements will likely require Caltrans oversight and approval through the Project Engineering Evaluation Report (PEER). This process is similar to the encroachment permit, but requires more complex projects that affect operations and projects with construction costs between \$1 million to \$3 million to have increased Caltrans review and oversight.

The roundabout improvements will likely require Caltrans project management oversight through the Project Initiation Document/Project Study Report (PID/PSR) and Project Approval/Environmental Document (PA/ED) phases prior to the development of construction documents (PS&E phase). This process is intended to ensure involvement with the community so the community's needs are met. Depending on what Caltrans requires for these improvements, the roundabouts may be able to be processed through a combined PSR & PA/ED process.

Any improvement that involves a new intersection control at either of the interchange ramp intersections will require an Intersection Control Evaluation (ICE) study. Caltrans has a defined methodology and process for completing an ICE study, which generally involves analysis of both roundabout and signal control, along with any other feasible alternative control solutions. An ICE study will be able to build upon the analysis completed as part of this corridor study, repackaged in a manner consistent with Caltrans requirements.

### **Process to Evaluate Potential Environmental Impacts**

The proposed improvement will require varying levels of environmental documentation and timeline for approval.

For the more minor improvements (Phase 1 and some Phase 2) that do not require right of way and are generally within previously disturbed areas, the CEQA process would likely lead towards a Categorical Exemption (CE). This process would include technical memoranda and record searches for cultural resources and hazardous materials, and would likely take approximately three to six months to complete.

For the more significant improvements (many in Phase 2) that are more complex and have greater impacts, the CEQA process would likely lead towards a Mitigated Negative Declaration (MND). The

CEQA environmental document could possibly end with a CE if the County can provide sufficient evidence of community support. The process for the MND would include the same technical memoranda and record searches as the minor improvements, with additional records searches and memoranda for biological resources, air quality, and noise studies. The expected duration of the MND would be eight to twelve months.

If federal monies are used to fund any of the proposed improvements, this would trigger approval through the NEPA process. This process is similar to the CEQA process, but has a longer duration and would likely require additional studies and/or technical memoranda. These additional studies and record searches include a Phase 1 Initial Site Assessment (ISA) for hazards, air quality and noise studies for construction and operations, and a biological memorandum. For the NEPA process, the expected durations could be approximately six to twelve months for the minor improvements and ten to fifteen months for the roundabouts and signal improvements.