

# Project Study Report-Project Development Support (PSR-PDS)

To

## Request Approval for Locally Funded Project to Proceed to Project Approval and Environmental Document Phase

On Route  
I-280, San Mateo County

Between  
SB On Ramps and NB Off Ramps

At  
Alpine Road

APPROVAL RECOMMENDED:

*Liliana Price*

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LILIANA PRICE, Project Manager  
Program and Project Delivery  
San Mateo County Transportation Authority  
*Accepts risks identified in this PSR-PDS and  
attached risk register.*

*Timothy Cheng*

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TIM CHENG, County of San Mateo Project Manager

APPROVAL RECOMMENDED:

*Cameron Oakes*

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Cameron Oakes, Deputy District Director  
Transportation Planning and Local Assistance

APPROVAL RECOMMENDED:

*Fitsum Worrede*

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Fitsum Worrede,  
Caltrans Project Manager

APPROVED:

*David Ambuehl*

David Ambuehl (Aug 27, 2025 16:00:29 PDT)

08/27/2025

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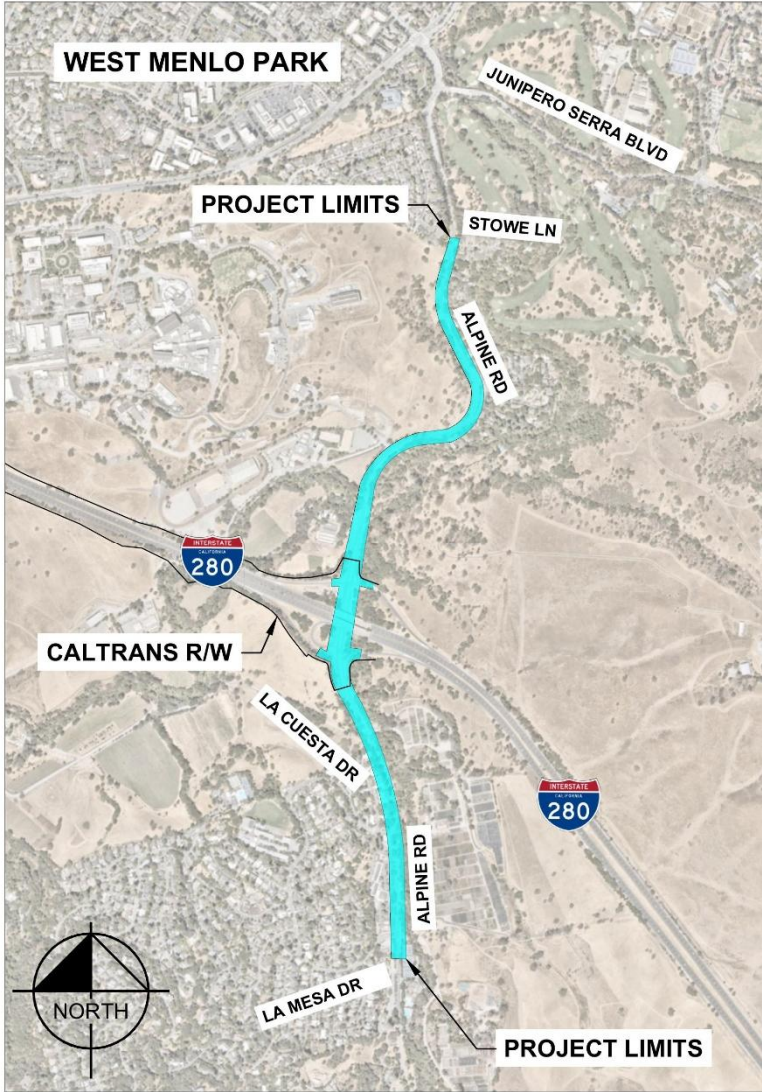
David Ambuehl, Acting Caltrans District Director

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Date

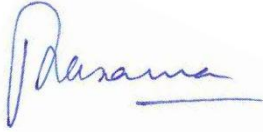
# Vicinity Map

## ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT



VICINITY MAP

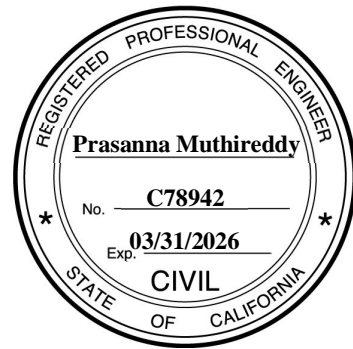
This project study report-project development support has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.



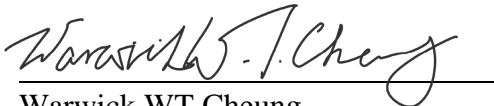
8/12/2025

Prasanna Muthireddy,  
REGISTERED CIVIL ENGINEER  
Kimley-Horn

DATE



REVIEWED BY:



Warwick WT Cheung,  
Acting Office Chief, Office of Project Initiation

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## 1. INTRODUCTION

The California Department of Transportation (Caltrans), in cooperation with the San Mateo County Transportation Authority (SMCTA) and San Mateo County proposes the Alpine Road Corridor Improvement Project (project) located in San Mateo County at Alpine Road interchange on Interstate – 280 (I-280) at post mile (PM) 0.04. The project proposes measures to improve multimodal access, mobility, circulation, and enhance safety along Alpine Road and at I-280 interchange. A Project location map is included as Attachment A.

The full project extends from West of La Mesa Drive on Alpine Road to East of Stowe Lane on Alpine Road. However, this PSR-PDS encompasses the portion of the project that is within Caltrans right of way, between the I-280 southbound and northbound ramp intersections. The project is anticipated to include the following elements within Caltrans right of way:

- Improve the existing intersection operations at I-280 ramps by replacing the existing side-street-stop control and all-way-stop control with either signals or roundabouts as the intersection control.
- Replace free right turns at I-280 ramps with controlled and slow turning movements.
- Improve existing bicycle and trail facilities where applicable to provide a continuous and low stress bicycle and pedestrian corridor.
- Provide high-visibility crosswalks at intersections.
- Install necessary signage and pavement markings to implement the above improvements.

Two Build Alternatives are proposed as part of the project, along with one No-Build Alternative. A detailed discussion of the project alternatives can be found in Section 7, Alternatives. The range of total construction costs, capital outlay support costs, and capital outlay right of way costs for the alternatives are listed in Table 1-1. Anticipated sources of funding include regional and local funds.

**Table 1-1: Project Information**

<b>Project Limits</b>	04-SM-280 PM 0.04	
<b>Number of Alternatives</b>	2 Build Alternatives 1 No-Build Alternative	
	<b>Full Project</b>	<b>Within Caltrans ROW</b>
<b>Capital Outlay Support</b>	\$7.7M to 8.9M (2024-2031) \$8.0M to 9.3M (2024-2031)	\$3.4M to 3.9M (2024-2031) \$3.5M to 4.1M (2024-2031)
<b>Capital Outlay Construction</b>	\$18.1M to \$22.3M (2024-2031) \$18.3M to \$23.1M (2024-2031)	\$8.0M to \$9.8M (2024-2031) \$8.4M to \$10.6M (2024 -2031)
<b>Capital Outlay Right of Way</b>	\$44,000 to \$736,500	\$0
<b>Funding Source</b>	SMCTA (Measure A&W) and other Federal, State, Local Funding	
<b>Type of Facility</b>	Undercrossing	
<b>Number of Structures</b>	None	
<b>Environmental Determination or Document</b>	CEQA – Initial Study/Mitigated Negative Declaration (IS/MND) NEPA - Environmental Assessment/Finding of No Significant Impact (EA/FONSI)	
<b>Legal Description</b>	In San Mateo County on I-280 at Alpine Road Undercrossing.	
<b>Project Development Category</b>	4B	

This PSR-PDS serves as the authorizing document to execute the Project Approval and Environmental Document (PA&ED) phase. A project report will serve as approval of the “selected” alternative and as the formal programming document for the remaining support and capital components of the project. SMCTA is the implementing agency for the Project Initiation Document and will be providing a Quality Management Plan for the work.

## 2. BACKGROUND

The Alpine Road corridor is located in the unincorporated San Mateo County, within the limits of Menlo Park and Portola Valley. The corridor provides direct local access to and from Menlo Park, Stanford University, and Portola Valley, as well as providing direct local access to the communities of Stanford Weekend Acres and Ladera, both of which are located in unincorporated San Mateo County. The corridor also serves as an access point for the Stanford Dish Trail and the Stanford Linear Accelerator Center.

Alpine Road is a minor arterial roadway that runs east to west from Portola Valley to Menlo Park. It provides direct access to the communities of Stanford Weekend Acres, Ladera, trails, and residential neighborhoods. The full project corridor is a 1.8-mile long, with one lane in each direction. There are existing 5-foot-wide Class II bike lanes, protected by a striped buffer on both sides of the corridor along parts of the corridor, and no striped buffer at other locations. The primary pedestrian facility is the Alpine Road Trail, which runs along the east side of Alpine Road, separated from the roadway and traffic. It is a multi-use trail which varies in width throughout the corridor.

Within Caltrans right of way at the I-280 interchange, Alpine Road is a four-lane arterial roadway which narrows down to a two-lane arterial facility outside the I-280 ramp intersections. Alpine Road has a signed speed limit of 35 miles per hour along the project

corridor, and has a design speed of 40 mph. Warning signs indicate advisory speeds of 25 or 30 miles per hour near side-streets and along sharp curves. The ramp intersections are either all-way stop controlled (at the northbound I-280 ramps) or side street stop controlled (at the southbound I-280 ramps). All ramp intersections have free right turning movements where vehicles turn at higher speeds which is deemed unsafe for pedestrians and bicyclists.

There are existing buffered Class II bike lanes for bicyclists use and Alpine Road Trail for pedestrian use within Caltrans right of way. Transit agency Samtrans has bus stops along the corridor. There is an active bus route, bus 87, with a stop near Wildwood Lane and Alpine Road, as well as a stop in the Ladera Community.

In March 2017, a corridor study (Alpine Road Corridor Study) was completed for Alpine Road by San Mateo County to assess existing and future congestion; gaps in the pedestrian and bicycle lane network; and roadway deficiencies. The corridor study included, preparing a preliminary traffic assessment, assessing preliminary right-of-way and utility impacts, evaluating improvements, developing preliminary alternatives, and preparing preliminary cost estimates. The preliminary alternatives identified in the corridor study have been refined for consideration in this phase. The traffic demand along the corridor continues to increase, which causes major difficulties accessing the corridor. The corridor study identified several multimodal deficiencies along Alpine Road and proposed near term and long-term improvements for this corridor. This document is not investigating the long-term improvements nor was the corridor study reviewed by Caltrans.

The project corridor is constrained by right-of-way, steep cross slopes, Los Trancos Creek, and San Francisquito Creek which limit the feasibility of widening 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.

SMCTA is the implementing agency working in partnership with Caltrans and the County of San Mateo for completion of the PSR-PDS document for the project.

### **3. PURPOSE AND NEED**

#### **Purpose:**

The purpose of the project is to:

- Improve bicycle and pedestrian access, safety and connectivity to transit, housing, commercial centers, and other destinations within the project limits.
- Improve intersection operations along Alpine Road within the project limits.
- Improve access to Alpine Road from the side streets.

#### **Need:**

The performance of the Alpine Road corridor is considered deficient due to the congestion experienced along the corridor. Currently, the Alpine Road corridor serves more than 25,000 vehicles per day on typical weekdays, and about 15,000-18,000 vehicles per day on typical weekends, and operates at deficient levels during peak traffic

periods, resulting in congestion and lengthy queuing. Significant delays are experienced in the eastbound direction during the AM peak period due to bottleneck at signalized intersections of Junipero Serra Boulevard and Alpine Road, and Sand Hill Road and Alpine Rd. In PM peak, congestion is observed both the eastbound and westbound directions. Similar to the AM peak period, the major eastbound bottleneck occurs at the signalized intersections at Junipero Serra Boulevard and Alpine Road, and Sand Hill Road and Alpine Road. In the westbound direction, major queuing was observed in the first hour of the PM peak period, occasionally extending from the stop control at the NB I-280 ramp intersection to the Bishop Ln and Alpine Rd intersection. This queuing appears to begin around 3:00 PM, peaking between 4:00 - 5:00 PM due to high demand volumes. 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/Page Mill Rd. and I-280/Sand Hill Rd Interchanges on either side of the Alpine Road contribute to traffic volumes along the study corridor as Alpine Road is used as an alternative to those more trafficked roadways. Community residents have expressed concern about the difficulty of turning out of driveways and unsignalized side-streets onto Alpine Road. Crash data on I-280 between the I-280/Page Mill Road and I-280/Sand Hill Road interchanges were obtained from Caltrans' Traffic Accident Surveillance and Analysis System (TASAS) for a five-year period from January 1, 2019, to December 31, 2023, as recommended by Caltrans, which is summarized in section 4 of this PSR-PDS as well as Attachment F. Crash data from the Statewide Integrated Traffic Records System (SWITRS) along Alpine Road is summarized in Attachment F.

SamTrans Routes 87 operates on the Alpine Road corridor and provides transit to local schools and other destinations. Due to current congestion and traffic patterns, public transit has become a less desirable mode of transit due to the unpredictable travel times. With the proposed improvements of this project, there is a potential for an increase in the number of people using bicycles within this corridor as a mode of transportation.

The primary pedestrian facility along the study corridor is the Alpine Road Trail, which roughly parallels the south side of Alpine Road. High speeds along the corridor contribute to pedestrian discomfort.

### **Outside Caltrans Right of Way:**

In some locations along the corridor that are outside Caltrans right of way, the Alpine Road trail does not accommodate pedestrian, and bicycle traffic that meet current standards.

The existing facilities also result in poor connectivity to existing housing, shopping, dining, and recreation facilities on both sides of the Alpine Road corridor. Pedestrians have difficulty crossing the Alpine Road corridor since there are not enough crossings within the project limits and no direct crossings to major commercial or residential facilities.

Residents have also expressed concerns about drivers speeding in 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.

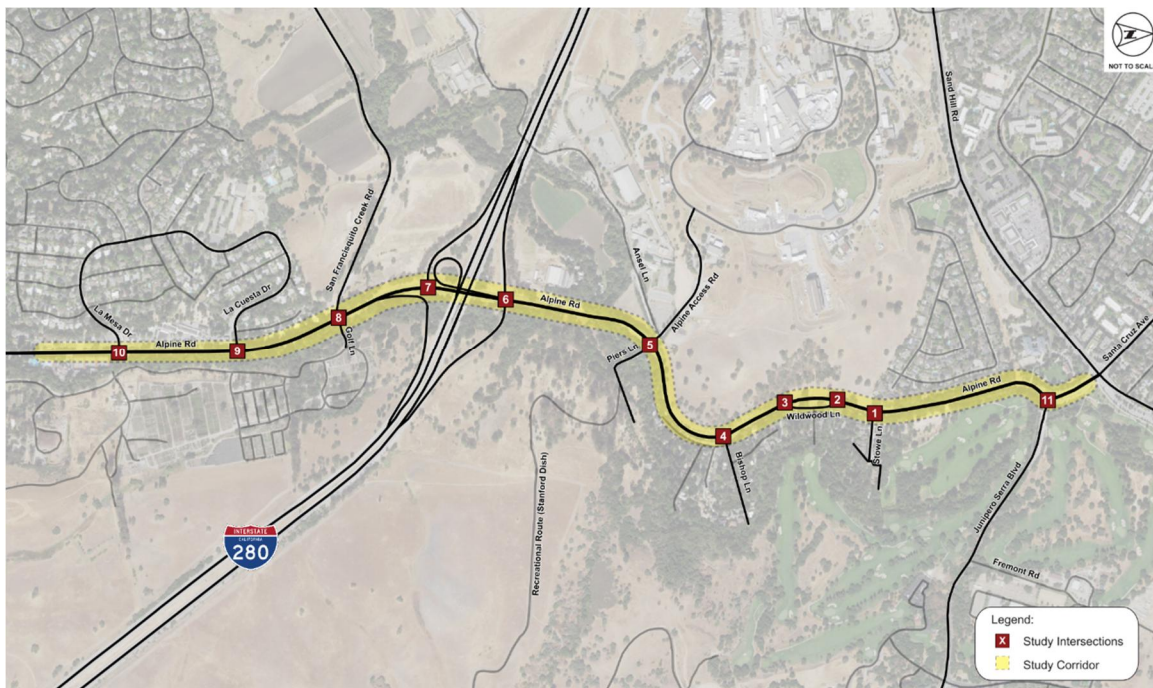
#### 4. TRAFFIC ENGINEERING PERFORMANCE ASSESSMENT (TEPA)

A TEPA was prepared for this project for the project limits utilizing readily available information. As detailed in **Attachment F**, the TEPA documents the existing traffic conditions of the study corridor using publicly available traffic data and information. Additionally, based on this data, the TEPA identifies and defines the scope of traffic related work to be completed in the subsequent PA&ED phase of the project, in the form of a Traffic Operations Analysis Report (TOAR). The following provides a summary of the preliminary assessment and key findings of the TEPA.

The key findings of the TEPA include:

##### **Project Traffic Study Limits:**

The Project study limits for traffic operations analysis includes the intersections between La Mesa Drive and Junipero Serra Boulevard along Alpine Road. **Figure 1** shows the Project location and study limits. Alpine Road runs in the true North and South directions, but I-280 also runs North and South. To be consistent with the I-280 directional conventions, Alpine Road is described to run East/West and I-280 runs North/South.



**Figure 1: Project Location and Study Area**

Existing traffic counts and operational data were derived from readily available sources and utilized for the TEPA. In March 2017, traffic data was collected from the Alpine Road Corridor Study project and completed by San Mateo County.

##### **Intersection Level of Service Summary and Analysis**

The results of the intersection level of service (LOS) analysis were derived from the same readily available resources where turning movement volumes were extracted.

The study intersections for the Alpine Road Corridor Improvement project were analyzed using methodologies consistent with the HCM 2010 Edition (Highway Capacity Manual-Transportation Research Board, 2010) within the VISSIM software. A summary of the AM peak and PM peak hours and LOS are shown in Table 4-1. Caltrans has not reviewed the results of the study and the study intersections will be reanalyzed in close coordination with Caltrans as a part of the PA&ED phase of the project.

As shown in Table 4-1, in the AM peak hour, all intersections operate at LOS D or better. In the PM peak hour, Wildwood Ln and Alpine Rd and Piers-Alpine Access Rd and Alpine Rd operate at LOS F and Santa Cruz-Alpine Rd and Junipero Serra Blvd and I-280 NB Ramps and Alpine Rd operate at LOS E. All other intersections operate at LOS C or better in the PM peak hour.

**Table 4-1: Existing (2015) Intersection Performance Summary**

No.	Intersection	Control	Existing (2015) Conditions			
			AM Peak*		PM Peak*	
			(7:30-8:30 AM)		(5-6 PM)	
			Delay (s)	LOS	Delay (s)	LOS
1	Stowe / Alpine	SSSC	5.4	A	21.5	C
2/3	Wildwood / Alpine	SSSC	31.0	D	>120	F
4	Bishop / Alpine	SSSC	16.2	C	23.3	C
5	Piers-Alpine Access / Alpine	SSSC	16.7	C	>120	F
6	NB I-280 Ramps / Alpine	AWSC	15.6	C	38.7	E
7	SB I-280 Ramps / Alpine	SSSC	12.5	B	4.6	A
8	Golf-San Francisquito / Alpine	SSSC	15.6	C	14.9	B
9	La Cuesta / Alpine	SSSC	15.0	C	14.3	B
10	La Mesa / Alpine	SSSC	14.0	B	10.8	B
11	Santa Cruz-Alpine / Junipero Serra	Signal	41.1	D	76.8	E

**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) The worst results between intersections 2 and 3 are reported at Wildwood/Alpine intersection.

\* Currently, it is observed that higher delays are experienced by vehicles on the side streets, particularly within short time intervals during the peak hours, due to normal fluctuations in volume distribution. The table shows average delay, which was calculated based on hourly volumes. During the PA&ED phase, the current conditions at these intersections will be calibrated to reflect field-observed conditions.

\*\* Note that these results have not been reviewed by Caltrans. Study intersections will need to be re-analyzed as part of the PA&ED phase of the project.

Source: Alpine Road Corridor Study Project, Kimley-Horn, March 2017

**Crash Data:**

Crash data for a 5-year period (between January 1, 2019, and December 31, 2023) from the Caltrans Traffic Accident Surveillance and Analysis System (TASAS) is provided below on I-280 between the I-280/Page Mill Road and I-280/Sand Hill Road interchanges within the project study limits, as recommended by Caltrans.

**Table 5-1: TASAS Table A Crash Rates (January 1, 2019 – December 31, 2023)**

Segment	No. of Crashes			ACTUAL Rates (per million vehicle miles)			AVERAGE Rates (per million vehicle miles)		
	TOT	FAT	FAT+INJ	TOT	FAT	FAT+INJ	TOT	FAT	FAT+INJ
NB I-280 OFF to Alpine Rd	22	0	10	1.4	0	0.64	1.31	0.009	0.48
NB I-280 ON from Alpine Rd	8	0	2	1.02	0	0.25	0.63	0.002	0.23
SB I-280 OFF to Alpine Rd	4	0	0	0.55	0	0	1.04	0.003	0.38
SB I-280 Loop ON from Alpine Rd	No Crashes Reported								
SB I-280 Diagonal ON from Alpine Rd	No Crashes Reported								

Notes:

PM = post mile

TASAS = Traffic Accident Surveillance and Analysis System

All reported crashes (includes Property Damage Only (PDO) crashes)

### **NB I-280 OFF to Alpine Rd**

Detailed analysis of the above-listed data shows the primary crash factors in the segment were:

- 2 (9.1 percent) Failure to Yield
- 1 (4.5 percent) Improper Turn
- 14 (63.6 percent) Speeding
- 2 (9.1 percent) Other Violations
- 3 (13.6 percent) Other Than Driver

The following types of crashes were included:

- 15 (68.2 percent) Rear End
- 2 (9.1 percent) Broadside
- 3 (13.6 percent) Hit Object
- 2 (9.1 percent) Other

### **NB I-280 ON to Alpine Rd**

Detailed analysis of the above-listed data shows the primary crash factors in the segment were:

- 1 (12.5 percent) Influence Alcohol
- 6 (75.0 percent) Failure to Yield
- 1 (12.5 percent) Unknown

The following types of crashes were included:

- 1 (12.5 percent) Head-On
- 6 (75.0 percent) Broadside
- 1 (13.6 percent) Hit Object

### **SB I-280 OFF from Alpine Rd**

Detailed analysis of the above-listed data shows the primary crash factors in the segment were:

- 1 (25.0 percent) Failure to Yield
- 3 (75.0 percent) Speeding

The following types of crashes were included:

- 3 (75.0 percent) Rear End
- 1 (25.0 percent) Broadside

### **SB I-280 Loop ON from Alpine Rd**

Data shows no recorded crashes on the above-listed segment.

### **SB I-280 Diagonal ON from Alpine Rd**

Data shows no recorded crashes on the above-listed segment.

There are 22 Property Damage Only crashes reported along the ramp segments noted in Table 5-1, and No Fatal crashes happened within the study segment along the ramps noted above. Speeding is the LEADING primary crash factor for most of the crashes and resulted in mainly Rear End crashes which indicate the primary issue along the study area – which is, continuous high-speed traffic along Alpine Road not providing gaps for side street traffic and speeding along the corridor. Based on the Crash Data, not all “Speeding” resulted in “Rear End” crashes.

Crash data is summarized in the TEPA, which is in **Attachment F**.

### **Future Traffic Performance Assessment:**

The TEPA qualitatively described and assessed the potential traffic operational changes associated with each alternative for the No Build and Build Alternatives. Caltrans has not reviewed the future traffic performance assessment and will review as part of PA&ED phase of the project.

### **Recommended Scope for PA&ED:**

A detailed traffic analysis will be performed for the existing and opening year for the No Build/Build alternatives in the PA&ED phase of the project to evaluate the traffic operations of the project alternatives. The following are identified as the scope of TOAR:

The project study limits for TOAR will include the following mainline segments along I-280:

1. Northbound I-280 from Page Mill Road to Alpine Road
2. Northbound I-280 from Alpine Road to Sand Hill Road
3. Southbound I-280 from Sand Hill Road to Alpine Road
4. Southbound I-280 from Alpine Road to Page Mill Road

The following key intersections along Alpine Road will also be included:

1. Alpine Road and Stowe Lane
2. Alpine Road and Wildwood Lane (East)
3. Alpine Road and Wildwood Lane (West)
4. Alpine Road and Bishop Lane
5. Alpine Road and Alpine Access Road/Piers Lane
6. Alpine Road and northbound I-280 ramps
7. Alpine Road and southbound I-280 ramps
8. Alpine Road and San Francisquito Creek Road/Golf Lane
9. Alpine Road and La Cuesta Drive
10. Alpine Road and La Mesa Drive
11. Alpine Road and Junipero Serra Boulevard

The study limits will be assessed and finalized during the PA&ED phase. The intersection of Santa Cruz Avenue/Sand Hill Road/Alpine Road may be added as a study intersection or included as a dummy node in the analysis network, as this intersection could affect the performance of the Junipero Serra Boulevard and Alpine Road intersection.

Traffic data collected in April 2024 will be used to perform the traffic operations analysis in the PA&ED phase. The project opening and design years are 2030 and 2050. Future demands on I-280 mainline, ramps, and local streets in the project study limits will be forecasted for opening and design years. The project anticipates using model outputs from the C/CAG-VTA Travel Demand Model as a basis for creating future year transportation networks for the Project.

Traffic analysis will evaluate impacts to the study intersections using the VISSIM simulation model. The operational analysis will be completed for existing conditions and future conditions for each alternative, with and without the Project as well as any proposed project construction phasing. For roundabout analysis, peak hours will be initially analyzed using SIDRA software, followed by VISSIM to evaluate the performance of all intersections and the corridor as an integrated network.

Intersection Safety and Operational Assessment Process (ISOAP) analysis will be performed at the northbound and southbound I-280 ramp termini intersections.

## **5. DEFICIENCIES**

As discussed in the previous sections, the project deficiencies along Alpine Road are related to traffic operations, access along Alpine Road, improving bicycle, pedestrian, and transit connectivity and safety. The project would improve traffic operations, access along Alpine Road by improving the intersection controls, and will also improve complete streets elements of the corridor by providing better bicycle and pedestrian infrastructure and

crossings through the project.

The I-280 ramp intersections at Alpine Road are side street stop control at the southbound ramp intersection and all-way stop control at the northbound ramp intersection. This current intersection control causes queuing on both Alpine Road as well as the I-280 off-ramps. The existing ramp intersections have free right turns which the turning vehicles pass at high speeds, causing high stress environment for pedestrians and bicyclists at these intersections.

**Outside Caltrans right of way:**

The intersections on either side of I-280 interchange within the project limits experience traffic operations issues with the existing side street stop-controlled intersections. Traffic congestion along Alpine Road makes it challenging for drivers to find gaps at the intersections of La Mesa Drive and La Cuesta Drive, resulting in lengthy queues. Similarly at Bishop Lane, Wildwood Lane and Stowe Lane, the short sight distance, continuous flow of vehicles, lack of gaps and high speeds make it difficult and dangerous for the side street users to access Alpine Road. The project will help to alleviate these issues with traffic signals or roundabouts at the intersections where volumes warrant and other mitigation measures where the volumes do not warrant. There are several locations along the project corridor where the existing bicycle and pedestrian facilities and crossings are not compliant with American with Disabilities Act (ADA) requirements.

## 6. CORRIDOR AND SYSTEM COORDINATION

**Corridor Overview:**

Within the study area, Alpine Road is a heavily utilized arterial. It is used for access to Menlo Park and Stanford University to the East and Portola Valley to the west. Alpine Road has a signed speed limit of 35 miles per hour along the project corridor, and has a design speed of 40 mph. Warning signs indicate advisory speeds of 25 or 30 miles per hour near side streets and along sharp curves.

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 south side of Alpine Road and varies in width throughout the corridor. In some locations, this path is more akin to a wide shoulder than a pedestrian path.

Within the interchange zone, Alpine Road is predominantly a 4-lane roadway, with turn lanes onto and coming from the interchange zone, as well as a 5-6 foot Class II buffered bike lane. There are on and off ramps at the northern part of the interchange as well as the southern part of the interchange.

**Regional Planning:**

Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) is a state and federally mandated, financially constrained long-range transportation plan for the Bay Area region and its nine counties. MTC maintains responsibility for the development and revisions to the RTP/SCS and acts as both the state-designated Regional Transportation Planning Agency (RTPA) and federally designated Metropolitan Planning Organization (MPO). Within Senate Bill 375, in addition to a revised RTP, each California region must develop an SCS that promotes walk and bike-friendly mixed-use commercial and residential development close to jobs, mass transit, shopping, schools, recreation, and other destinations. To meet the local region’s greenhouse gas emission reduction targets set by the State of California, and to promote more sustainable infrastructure development, MTC adopted PBA 2050 in October 2021. The project is consistent with PBA and supports the initiative to create healthy and safe streets and work toward a transportation system that prioritizes improved access to opportunity for all Bay Area residents and reduces climate emissions.

**SHOPP:**

The projects shown in Table 6-1 are within the project vicinity and included in the State Highway Operation and Protection Program (SHOPP) and other funding programs. SHOPP is the State’s “fix-it-first” program that funds the preservation and repair of the State Highway System (SHS), safety improvements, and some highway operational improvements.

**Table 6-1: SHOPP Projects Located in the Vicinity**

PROJ ID	EA	County Route	Post Mile	Funding Source/ Program Year	Legal Description	Work Description
04200 00181	4J85A	San Mateo 280	R0.050	RMRA/2025	Near Menlo Park, at Alpine Road Undercrossing No. 35-0009L/R.	Plant establishment, creek monitoring, and biological monitoring work for EA 4J850.

**Complete Streets:**

A Complete Street is a transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users. All transportation improvements (new and retrofit) are viewed as opportunities to improve safety, mobility, and access for all travelers, including public transit users, bicyclists, and pedestrians. **Attachment I** contains the Complete Streets Decision Document for this project. This project Purpose and Need is consistent with the goals of Complete Streets and Caltrans Director’s Policy 37. Improvements to local roads at the corridor have considered all modes of transportation including pedestrians, bicyclists, transit, and motorists by implementing Caltrans Complete Streets Policies. Such improvements include upgraded sidewalks, bikeways, and consideration for more pedestrian/bicycle friendly ramp intersection geometry to support and enhance the larger bicycle and pedestrian network in the area through improved connectivity.

The following projects are listed in the 2021 San Mateo County Bike and Pedestrian Master Plan.

**Table 6-2: Projects Within 2021 San Mateo County Bike and Pedestrian Master Plan**

PROJ ID	CORRIDOR	FROM	TO	LENGTH (MILES)	RECOMMENDED BIKEWAY	RECOMMENDATION TYPE	LEAD AGENCY
24.09	Alameda De Las Pulgas, Santa Cruz Ave	Sand Hill Rd	Stockbridge Ave	1.52	Class 2b Buffered Bicycle Lane	Upgrade	San Mateo
33.02	Oak Ave, Oak Knoll Ln	Olive St	Sand Hill Rd	0.63	Class 3b Bicycle Boulevard	Upgrade	Menlo Park
54.01	Pescadero Creek Rd, State Highway 84	Alpine Rd	580 ft SW of Cuesta Real / Redwood Ln/ Ventura Ave	1.83	Class 3C Bicycle Route with Wide Shoulders	New	Unincorporated San Mateo County

**Table 6-3: Proposed RTP Project List (San Mateo Transportation Plan)**

Sponsor Agency	Project Title
San Mateo County/ County Association of Governments (CCAG)	County-wide Implementation of Bicycle/ pedestrian Enhancements
San Mateo County/ County Association of Governments (CCAG)	Implement incentive programs to support transit-oriented development
San Mateo County/ County Association of Governments (CCAG)	County-wide Local Streets and roads operation and maintenance
San Mateo County/ County Association of Governments (CCAG)	County-wide Implementation of the Safe Routes to Schools Program
San Mateo County/ County Association of Governments (CCAG)	County-wide Implementation of transportation for Livable Communities Program
San Mateo County/ County Association of Governments (CCAG)	County-wide Implementation of Transportation Environmental Enhancements
San Mateo County/ County Association of Governments (CCAG)	County-wide Implementation of non-capacity Increasing local road Intersection
San Mateo County/ County Association of Governments (CCAG)	Country-wide implementation of local circulation improvements and traffic management programs countywide
San Mateo County/ County Association of Governments (CCAG)	County-wide Intelligent Transportation System (ITS) and Traffic Operation System Improvements

**Table 6-4: Near- Term Planned Freeway Interchange Improvements Projects in Vicinity**

Freeway Interchange	Lead/Jurisdiction
I-280/Page Mill Interim Improvements	County/Palo Alto/Los Altos Hills/Caltrans

**Table 6-5: Plan Bay Area 2050 Transportation Projects in Vicinity**

RTPID	Title	Scope	Open Period	Cost/Funding (millions, YOE)
21-T06-027	Corridor & Interchange Improvements   US-101   San Mateo County	Interchange improvements at SR-92, 3 <sup>rd</sup> Ave, Holly St, Peninsula Ave, Produce Ave, Sierra Point Pkwy, University Ave, Willow Rd, and Woodside Rd; and funding for a planning study to scope interchange improvements at Candlestick.	2021 – 2035	\$901

## 7. ALTERNATIVES

The project considers a No Build Alternative as well as two Build Alternatives, Build Alternative 1 and Build Alternative 2.

### No Build Alternative

Under the No Build Alternative, the existing Alpine Road corridor would remain unchanged, except for existing planned and programmed improvements to I-280, and development in unincorporated San Mateo County. Under the No Build Alternative, existing traffic conditions along the Alpine Road corridor would worsen as volumes increase due to growth in the area and high stress conditions would continue to be present for bicyclists, pedestrians, and no improvements would be made to crosswalk and bicycle lane striping. The No Build Alternative represents the baseline alternative and offers a basis for the analysis and evaluation of the two Build Alternatives. The No Build Alternative does not meet the Purpose and Need.

### Build Alternative 1

Build Alternative 1 would eliminate free right turns at the I-280 off ramp approaches to Alpine Road, by installing traffic signals at the freeway on/off ramps. This alternative would also improve the existing bicycle facilities at the interchange by decreasing the number of conflict points, providing slow turning movements for vehicles and by decreasing the crossing length.

*Outside Caltrans Right of Way:*

Build Alternative 1 would install single-lane traffic signals with controlled pedestrian and bicycle crossing at the Alpine Road/La Mesa Drive and Alpine Road/La Cuesta Drive intersections. The existing Class II bike lanes between these intersections would be upgraded, adding buffers and increasing visibility at crossings. Existing pedestrian and bicycle crossings will also be upgraded to ADA compliance for increased protection of pedestrians and bicyclists. Build Alternative 1 would also improve side street access to the Alpine Road corridor by adding center turning lanes where feasible and by improving corner sight distance. This alternative also includes roadway improvements that promote traffic calming within the corridor such as Rectangular Rapid Flashing Beacons (RRFB), dynamic speed-reading signs and other pertinent signage. Existing parking at Piers Lane and access from Wildwood Lane would be evaluated for improvements that aid in increased visibility for vehicles entering or exiting Alpine Road. The existing bus stop across from Wildwood Lane would also be improved and a new pedestrian crossing to the bus stop would be evaluated.

**Build Alternative 2**

Build Alternative 2 would include the same improvements as Build Alternative 1 but would install roundabouts rather than traffic signals at the I-280 on and off-ramp intersections.

*Outside Caltrans Right of Way:*

Build Alternative 2 would install roundabouts at the Alpine Road/La Mesa Drive and Alpine Road/La Cuesta Drive intersections.

The table below shows a summary of the nonstandard design features within the project limits for both the project Build alternatives.

**Table 7.1: Design Standard Risk Assessment – Alternative 1 and 2**

<b>Design Exception Number/  Location</b>	<b>Design Standard from Highway Design Manual  Tables 82.1A &amp; 82.1B</b>	<b>Existing/Proposed Nonstandard Design Criteria</b>	<b>Probability of Nonstandard Design Feature Approval (None, Low, Medium, High)</b>	<b>Justification and potential mitigation for proposing nonstandard feature</b>	<b>Considerations for additional data/studies in PA&amp;ED</b>
B1 “AL” STA 386+00	Ramp Lane Width: [B: Index 504.3(1)(b)] At Southbound I-280 On-Ramp	Standard: R < 150', Lane width = 20'  Existing: R = 120'; Lane width = 18'.  Proposed: Maintain Existing.	High	In order to meet this standard, the SB I-280 on ramp bridge would need to be widened. This will cause excessive environmental impacts because of impacts to the	N/A

				creek under the bridge and add costs that are out of scope for the project's purpose and need.	
--	--	--	--	--	--

## 8. RIGHT-OF-WAY

### Right-of-Way:

A PSR-PDS level right of way data sheet for each of the Build Alternatives is included in **Attachment M**. There are minor right of way impacts anticipated for all alternatives due to the layout configuration, resulting in right of way acquisition. All other right of way impacts are related to utilities.

No access control needs are anticipated during this phase of the project.

### Utilities:

During the PA&ED phase through the utility verification process, all existing utilities impacted will be assessed and the project team will coordinate with utility owners to identify potential utility conflicts. The following is a list of the public utility companies within the project limits and their associated utility. **Attachment L** includes an exhibit that shows existing utilities within the project limits. Record maps were requested and received for the utility companies in the project area based on a USA design stage ticket. All utilities will be reassessed in the PA&ED phase for conflicts with the Build Alternatives, including:

- West Bay Sanitary District
- Comcast
- AT&T
- County of San Mateo
- PG&E
- Stanford University
- SFPUC

It is anticipated that utility relocations may be required for the Build Alternatives. Utility poles in conflict with the project would be moved in coordination with utility companies prior to construction. Additionally, several underground sewer, water, and gas lines, and their respective maintenance holes, may require adjustment to final grade.

As stated above, in the PA&ED phase of the project, the design team will confirm the impacts with the utility owners through the utility verification process. Positive location, as prescribed in Chapter 17 of the Project Development Procedures Manual, will be performed, as required, either prior or concurrent with the design phase. See **Attachment M** for R/W Data Sheet for both alternatives, which include utility relocation estimates.

**Railroad:**

There are no railroad crossings within the project limits. It is not anticipated that the Build Alternatives will have railroad impacts, and it is assumed there will be no railroad agreement.

**9. PUBLIC ENGAGEMENT**

The following key stakeholders have been identified for this project and consist of representatives from the following agencies/companies:

- Caltrans
- San Mateo County Transportation Authority
- County of San Mateo
- Stanford University
- City of Menlo Park
- Town of Portola Valley
- Samtrans – Transit
- Samtrans – Government and Community Affairs
- Silicon Valley Bicycle Coalition
- Ladera Community Association
- San Mateo County Fire Department

The County, Caltrans, SMCTA, and their partner agencies are supportive of this project and have participated in the development and review throughout the PSR-PDS process. During the PA&ED phase, the same stakeholders will be engaged to help further develop the project components.

The project team held two community outreach meetings and several stakeholder meetings with the County of San Mateo, Caltrans, and the SMCTA as part of the PSR-PDS development. The purpose of these meetings was to share information about the proposed project, receive input from community and stakeholders and understand their concerns and priorities. The team presented and gathered input on project purpose and need, proposed improvements, evaluation criteria, and project delivery process and schedule. Table 10-1 below lists all the stakeholder and community meetings that were conducted to date as part of the PID phase:

**Table 10-1: List of Completed and Planned Outreach Activities**

PID		Activity	Location
Date	Time		
05/06/2024	10:00 AM – 11:30 AM	Project Stakeholder Meeting (SMCTA, County of San Mateo, CalFire, City of Menlo Park, Silicon Valley Bicycle Coalition, Stanford, SamTrans)	Zoom
05/29/2024	1:00 PM – 2:00 PM	Project Stakeholder Meeting (County, SMCTA, Ladera Community)	Zoom
10/16/2024	6:00 PM – 8:00 PM	Public Outreach	Hybrid
11/13/2024	6:30 PM – 8:00 PM	Public Outreach	Hybrid

The public has and will have additional opportunities to submit their feedback or comments during the environmental phase. The project will have public engagement meetings and public information campaigns, in varying media, so the public may learn about the project and its proposed improvements. Public in-person/virtual forums have been hosted, as shown in the table below, and information will be provided online to educate the public. Phase 1 of the engagement process will take place early in the Project Initiation Document (PID) phase, while Phase 2 will take place close to the beginning of the PA&ED phase.

The Ladera community conducted their own separate survey/questionnaire with the residents in their community and provided feedback to the project team for consideration as part of the project development.

During the PA&ED phase, community meetings and stakeholder meetings will be conducted. A detailed outreach plan for the PA&ED phase will be developed and will be shared with Caltrans, County and SMCTA for approval prior to engaging stakeholders and the community. Laurel Sears, Caltrans Public Engagement Coordinator, to be included during the Public Engagement Plan phase in the PA&ED.

## 10. ENVIRONMENTAL COMPLIANCE

A Preliminary Environmental Analysis Report (PEAR) was prepared to determine the anticipated environmental issues and the required environmental document is included as **Attachment Q**. The anticipated level of CEQA environmental document for the project is an Initial Study with Mitigated Negative Declaration (IS/MND). As currently defined, the project does not appear to include elements that would result in significant and unavoidable impacts. A traffic analysis will be developed during the PA&ED phase to determine if the project would result in measurable and substantial induced VMT. If during the PA&ED

phase the project scope changes or through the traffic analysis it is determined the project would result in measurable and substantial induced VMT, the appropriate level of CEQA document would be an EIR. It is anticipated that the Caltrans District 4 Office of Environmental Analysis will make the class of action determination that the NEPA environmental document type for this project would be a routine Environmental Assessment (EA).

The County would serve as the CEQA lead agency and Caltrans would serve as the NEPA lead agency under its assumption of responsibility pursuant to 23 U.S. Code 327. It is expected that the environmental technical reports and the PA&ED would take approximately 24 months to prepare and process for final adoption/approval of the PA&ED if an IS/EA document is prepared. This would include time for coordination with the environmental division staff within Caltrans; but does not include time for obtaining permits from federal or state resource agencies. It is anticipated that multiple environmental studies and reports will be required for this project. For both Build Alternatives, the key environmental issues appear to be potential impacts to cultural resources during construction and hydrologic impacts associated with changes in impervious surfaces and corridor design.

The following technical reports determined from the PEAR should be prepared during the PA&ED phase to analyze potential environmental impacts under the Build Alternatives:

- Community Impact Assessment (environmental justice and equity evaluation, and 4(f) memorandum included)
- Standard Visual Impact Assessment
- Historic Property Survey Report
- Archaeological Survey Report
- Historic Resources Evaluation Report
- Location Hydraulic Study (Sea-Level Rise memorandum included)
- Water Quality Assessment Report
- Storm Water Data Report
- Preliminary Geotechnical Report
- Paleontological Evaluation Report
- Initial Site Assessment
- Air Quality Report (Mobile Source Air Toxics and Greenhouse Gas Emissions)
- Energy Analysis
- Noise Technical Memo
- Natural Environment Study – Minimal Impact
- Biological Assessment
- Aquatic Resources Delineation Report

It is anticipated that the following regulatory permits/approvals would be required for the proposed project:

- National Pollutant Discharge Elimination System (NPDES) Statewide Storm Water Construction General Permit.
- State Historic Preservation Office (SHPO) Section 106 Concurrence

- County of San Mateo Significant/Heritage Tree Removal Permit
- San Mateo County ROW Acquisition
- California Department of Fish and Wildlife Section 1602 Lake and Streambed Alteration Agreement
- U.S Army Corp of Engineers Section 404 Permit
- San Francisco Regional Water Quality Board Section 401 Water Quality Certification Permit

## 11. CLIMATE CHANGE ADAPTION & GREENHOUSE GAS (GHG) MITIGATION

### Greenhouse Gas (GHG) Reduction Measures:

A preliminary estimate of GHG emissions attributed to the proposed project was calculated using the Federal Highways Infrastructure Carbon Estimator (ICE) Tool (Version 2.2.8), the Infrastructure Carbon Estimate (ICE) is included as **Attachment S**.

Alternative 1 is estimated to generate a total of 531 MTCO<sub>2</sub>e Baseline. Alternative 2 is estimated to generate a total of 1037 MTCO<sub>2</sub>e Baseline. As indicated on the output data generated from the tool inputs, the primary source of emissions is anticipated to be from operations and maintenance for both Alternatives. As all projects are required to implement measures to reduce GHG emissions, potential GHG reduction measures have been reviewed and the following are to be considered for this project.

Proposed GHG reduction measures for this project include:

- Using alternative fuels and vehicle hybridization
- Substituting recycled asphalt pavement for virgin asphalt aggregate.
- Using alternative vegetation management strategies

### Climate Change Risk and Adaptation Measures:

Climate risks identified using Caltrans Climate Change Vulnerability Assessments and TPSIS data indicate the project area faces risks from extreme precipitation, increase in temperature and wildfires. The Caltrans District 4 Adaptation Priorities Report documents several assets at risk in the area, including the project location specified. Potential impacts include disruptions to emergency services, the primary transportation network, and increased vehicle miles traveled due to reroutes.

The project limits designate multiple areas as high or moderate fire hazard severity zones. Wildfire is a current risk for the project limits.

Here are some design adaptation options for the project:

- Using cool pavement, which will reflect more solar radiation and absorb less heat.
- Replace the existing wood MBGR posts with MGS steel posts, which are more fire- resistant.
- Improve drainage by using permeable pavers to create a more penetrable structure than traditional pavement.

The Climate Change Risk and Adaptation Report is included as **Attachment R**.

## 12. FUNDING

This project is sponsored by the County of San Mateo and the San Mateo County Transportation Authority Measure W funds and is currently funded for the PID phase only. The County is working with local, state, and federal agencies to identify funding sources for the PS&E and construction phases of the project.

### A. Capital Outlay Project Estimate (escalated)

A programming-level cost estimate was developed for the project to help define the scope of work. The escalation was assumed to be 4.89% for fiscal year 2025/2026 and 3.8% for fiscal year 2026/2027 through the mid-point of construction in the year 2029. Currently, there will be no right-of-way acquisition necessary as part of this project for the Build Alternatives in Caltrans right-of-way. The total right-of-way cost component is \$0. There will be minor right-of-way acquisition outside of Caltrans right-of-way for the intersection geometrics. The project estimate is based on major areas of risk, with appropriate consideration for contingency. Estimated costs are subject to change as new and more detailed information becomes available.

The Capital Outlay Project Estimate is included as **Attachment E** and the Right of Way PID Level Data Sheet is included as **Attachment M**.

**Table 13-1: Estimated Capital Project Costs (Full Project)**

Alternative	Range of Estimate		State Funds		Other Funds	
	Construction	ROW	Construction	ROW	Construction	ROW
<b>Alternative 1</b>	\$22,271,000	\$49,000	\$6,500,000	\$0	\$15,771,000	\$49,000
<b>Alternative 2</b>	\$23,127,000	\$72,000	\$8,400,000	\$0	\$14,727,000	\$72,000

The level of detail available to develop these capital outlay project estimates is only accurate to within the above ranges and is useful for long-range planning purposes only. The capital outlay project estimates should not be used to program or commit State-programmed capital outlay funds.

### Capital Outlay Support Estimate

The current estimated support costs for the PA&ED phase of this project range from \$2,183,000 to \$2,339,000 for Alternatives 1 and range from \$2,278,000 to \$2,440,000 for Alternative 2. The Capital Outlay Project Estimate is included as **Attachment E** which includes the support cost estimate on the cover page.

### Cooperative Agreement

The executed Cooperative Agreement No. 04-2962 (March 11, 2024) between Caltrans and the San Mateo County Transportation Authority (SMCTA) authorized the development of the PSR-PDS.

### Maintenance Agreement

A Maintenance Agreement may be required for the project between Caltrans and San Mateo County and will be developed in the PA&ED phase.

### 13. DELIVERY SCHEDULE

**Table 14-1: Delivery Schedule**

Project Milestones		Milestone Date (Month/Year)
PSR/PDS DOCUMENTATION	M380	08/2024
COMMUNITY OUTREACH	M800	11/2024
DEVELOP TEPA	M020	12/2024
DEVELOP PEAR	M020	04/2025
PID APPROVAL	M600	07/2025
PROGRAM PROJECT	M015	03/2025
PA/ED PREPARATION	M200	08/2025
PA/ED APPROVAL	M600	06/2027
PS&E	M380	03/2029
RIGHT-OF-WAY CERTIFICATION	M600	04/2029
BEGIN CONSTRUCTION	M800	07/2029

The anticipated funding fiscal year for construction is 2028/2029.

### 14. RISKS

A quantitative risk register is being maintained for this project and is included as **Attachment H**. The risk register is an assessment of potential risks and project impacts that may occur in subsequent phases and would be updated throughout the project development process. In accordance with the Caltrans Risk Management Handbook, a risk register with quantitative assessment has been prepared for identified risks and the assignment of cost and schedule impacts are based on risk evaluation for this phase of the project. As additional studies are completed as part of the PA&ED phase, a more detailed and quantitative approach to define and describe the risks can be completed. In summary, the key risks included in the risk register are as follows:

- The risk of scope creep, which may result in additional cost and schedule delays.
- The risk that different stakeholder’s priorities may require changes in the project design, which could lead to project delay and cost increase.
- The risk that regulatory agencies may require changes in the project design and right-of-way requirements, which may result in additional cost and schedule delays.
- The risk of climate vulnerability, due to extreme temperature and precipitation, which could cause construction delays.

The approval from Caltrans of nonstandard features risk will continue to be assessed in the PA&ED phase of the project.

## 15. OTHER CONSIDERATIONS

### VALUE ANALYSIS

A Value Analysis (VA) study is not required for the project because the total cost of the project, including construction, right of way, and support costs, does not meet the federal threshold of \$50 million or the Caltrans threshold of \$25 million to consider conducting a VA study (established in the Chief Engineer Memo dated February 5, 2019).

### RESOURCE CONSERVATION

The proposed project will minimize the use of energy and nonrenewable resources wherever possible during construction. No major facilities can be salvaged or relocated as part of the project. However, whenever possible, existing roadway items such as signs, light standards, guardrails, and other associated hardware will be reused on the project or relocated/stockpiled to be used at a later date. The asphalt concrete pavement and concrete removed from existing roadways and structures may be reused as either base material or embankment material. Measures to conserve energy and nonrenewable resources during construction will be considered during the Design phase.

### REVERSIBLE LANES

The project is an operational improvement project. It is not a capacity-increasing project or a mainline realignment project. Therefore, reversible lanes do not apply and were not considered for the project.

### VEHICLE MILES TRAVELED DECISION DOCUMENT (VMTDD)

A Vehicle Miles Traveled Decision Document (VMTDD) is prepared in **Attachment P**. The proposed project is exempt from further VMT evaluation, as all alternatives are not likely to include travel per Section 5.1.1 of the TAC under CEQA.

### COMPLETE STREETS DECISION DOCUMENT (CSDD)

A Complete Streets Decision Document (CSDD) is prepared in **Attachment I**. The proposed project is currently meeting the requirements for consideration of complete street elements in this phase. Further analysis will be taken during the PA&ED phase.

## 16. EXTERNAL AGENCY COORDINATION

The project requires the following coordination:

### California Department of Fish and Wildlife

California Fish and Game Code Section 1602  
Lake or Streambed Alteration Agreement

### San Francisco Bay Regional Water Quality Control Board

Clean Water Act Section 401  
Water Quality Certification  
National Pollutant Discharge Elimination System Permit

### Local Agency

Maintenance Agreement may be required with the County of San Mateo

## 17. PROJECT REVIEWS

District Maintenance	_____	Date _____
District Design Liaison	<i>Bach-Yen Nguyen</i>	Date <u>May 2025</u>
District Traffic Safety Engineer	<i>Rick Yeung</i>	Date <u>June 2025</u>
Headquarters Project Delivery Coordinator	_____	Date _____
Project Manager	<i>Fitsum Worrede</i>	Date <u>May 2025</u>
District Project Initiation	<i>Warwick WT Cheung</i>	Date <u>May 2025</u>
District Safety Review	_____	Date _____
District Highway Operations	<i>Lance Hall</i>	Date <u>May 2025</u>
Constructability Review	_____	Date _____

## 18. PROJECT PERSONNEL

Agency & Role/Title	Name	Email
Caltrans Project Manager	Fitsum Worrede	fitsum.worrede@dot.ca.gov
Caltrans Office Chief, Design (Peninsula)	Peter Aguilera	peter.aguilera@dot.ca.gov
Caltrans Office Chief, System Planning (Marin County and San Mateo County)	Jacob Buffenbarger	jacob.buffenbarger@dot.ca.gov
Caltrans Office of Project Initiation; Branch Chief	Warwick Cheung	warwick.cheung@dot.ca.gov
Caltrans Traffic Forecasting	Philip Cox	philip.cox@dot.ca.gov
Caltrans Oversight Project Engineer	Sherry Huang	sherry.huang@dot.ca.gov
Caltrans Regional Project Manager	Rommel Pardo	rommel.pardo@dot.ca.gov
Caltrans Office of Project Initiation; PID Coordination	Kang Tang	kang.tang@dot.ca.gov
Caltrans ROW/Project Coordination	Lam V. Nguyen	lam.nguyen@dot.ca.gov
SMCTA Project Manager	Liliana Price	pricee@samtrans.com
County of San Mateo Traffic Engineer	Tim Cheng	tcheng@smcgov.org
Kimley-Horn Project Manager	Prasanna Muthireddy	prasanna.muthireddy@kimley-horn.com
Kimley-Horn Public Outreach Lead	Brandi Childress	brandi.childress@kimley-horn.com
Kimley-Horn Support Services Lead	Jake Schramm	jacob.schramm@kimley-horn.com
Kimley-Horn Traffic Engineering Lead	Ravi Puttagunta	ravi.puttagunta@kimley-horn.com
Circlepoint Environmental Lead	Audrey Zagazeta	a.zagazeta@circlepoint.com

**19. ATTACHMENTS (NUMBER OF PAGES)**

- A. Location Map (1)
- B. Vicinity Map (1)
- C. Preliminary Layouts (2)
- D. Typical Section (1)
- E. Capital Outlay Project Estimates (40)
- F. Traffic Engineering Performance Assessment (TEPA) (29)
- G. Transportation Planning Scoping Information Sheet (TPSIS) (27)
- H. Risk Register (2)
- I. Complete Streets Decision Document (CSDD) (6)
- J. Transportation Management Plan (TMP) (10)
- K. Storm Water Data Report (SWDR) (20)
- L. Existing Utilities Exhibit (2)
- M. Right of Way Data Sheet (16)
- N. DIB 78 (23)
- O. HQ Design PSR-PDS Scoping Checklist (13)
- P. Vehicle-Miles Traveled Decision Document (VMTDD) (6)
- Q. Preliminary Environmental Analysis Report (PEAR) (25)
- R. PIR Climate Change Risk and Adaption Report (28)
- S. Infrastructure Carbon Estimator – Attachments for Climate Change Risk and Adaption Report (ICE) (57)

**Attachment A**  
**Location Map**

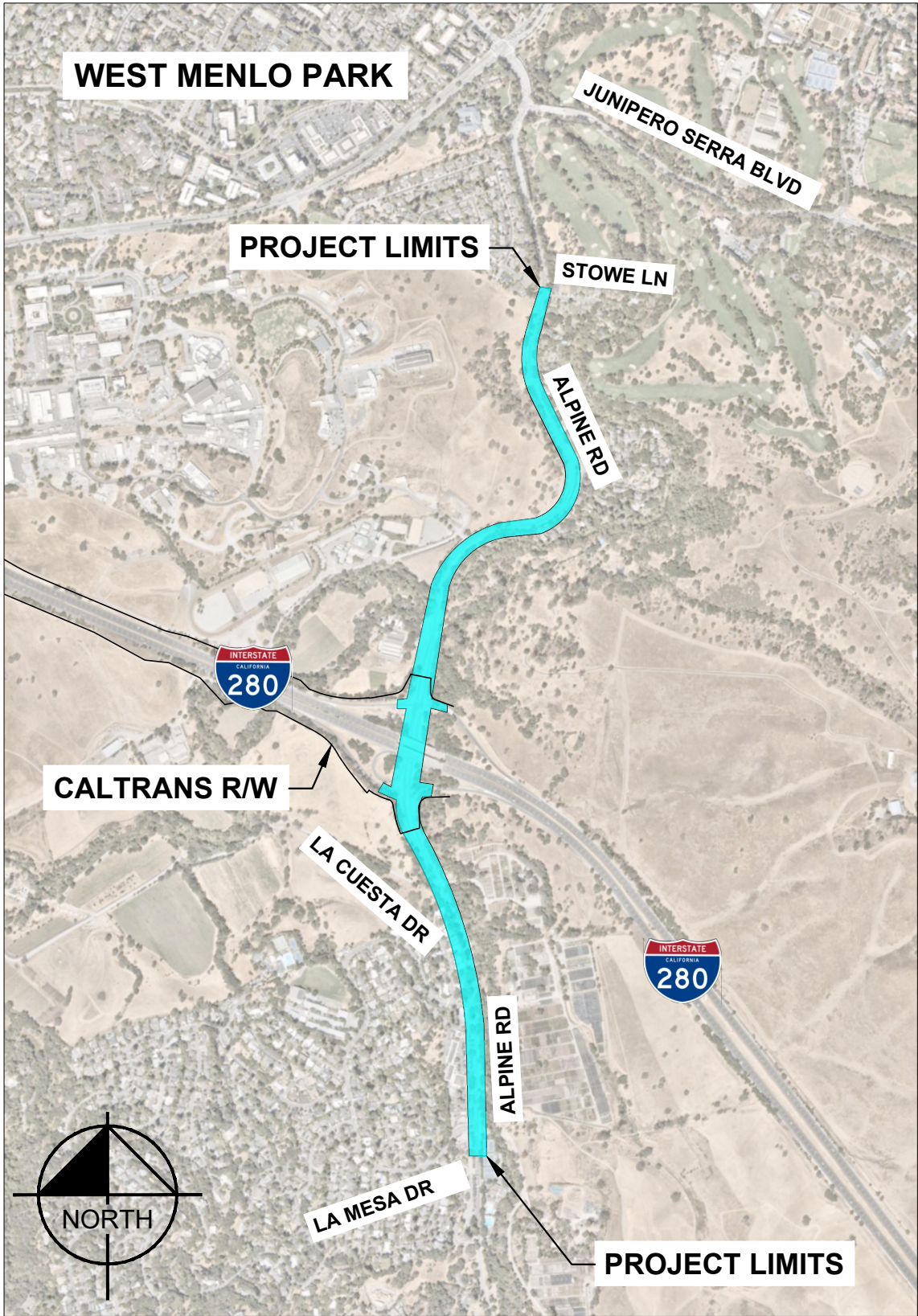
# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT



## LOCATION MAP

**Attachment B**  
**Vicinity Map**

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT



VICINITY MAP

**Attachment C**  
**Preliminary Layouts**

**LEGEND**

- CALTRANS R/W
- COUNTY R/W
- EXISTING CLASS II BIKE LANE
- PROPOSED TRAIL CONNECTION
- PROPOSED CLASS IV BIKEWAY
- STRIPING
- PROPOSED TRAFFIC SIGNAL
- PROPOSED RRFB OR HAWK CROSSING TREATMENT

**"AL" LINE CURVE DATA**

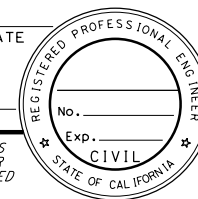
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3b	1238.00'	4° 37' 41"	392.33'	426.09'	1975348.98	6069372.58
4	2050.55'	2° 47' 38"	92.95'	185.77'	1976557.53	6069570.55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	280	.04		

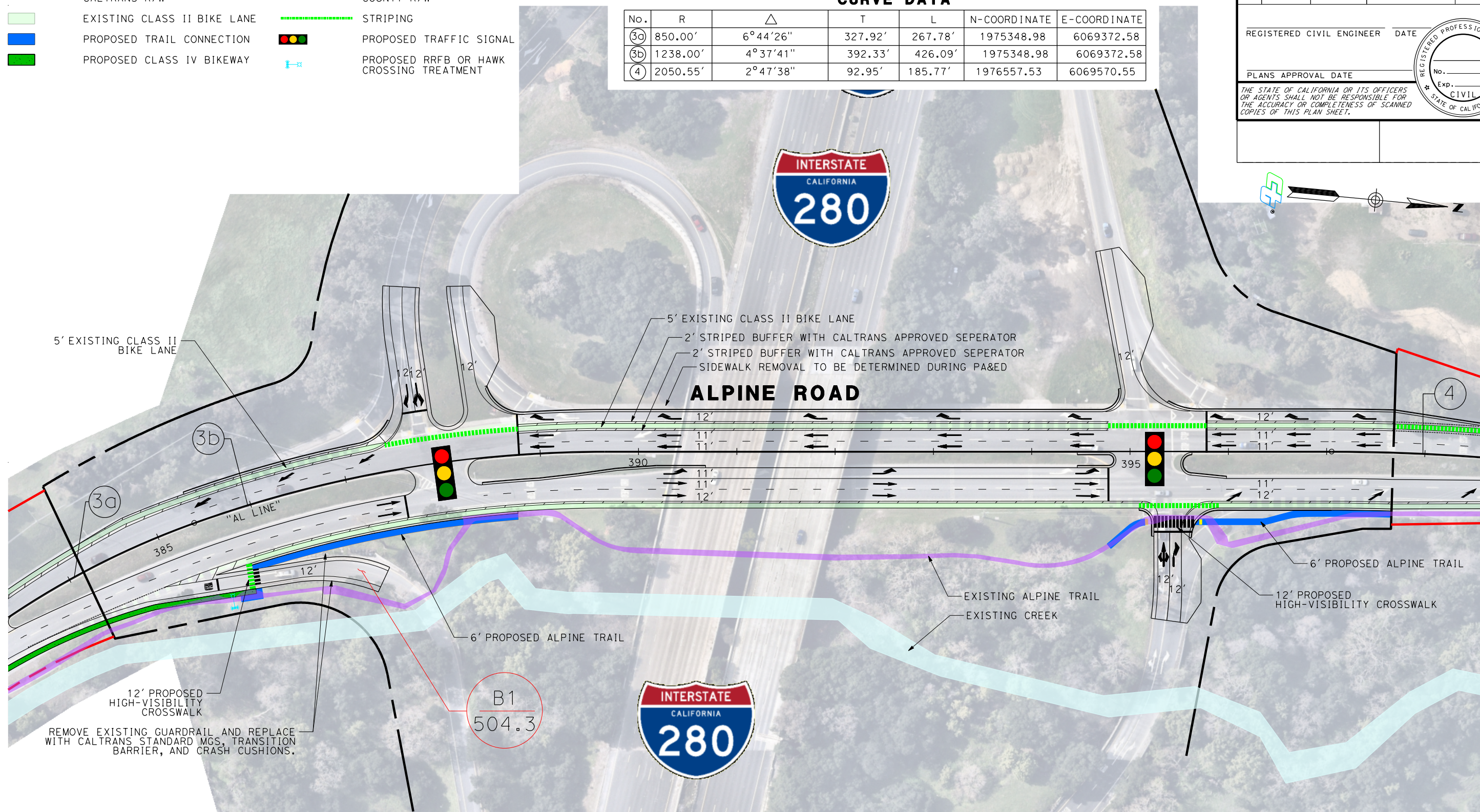
REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_

PLANS APPROVAL DATE \_\_\_\_\_

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



REVISIONS: [Grid with 'x' marks]  
 REVISOR: [Grid with 'x' marks]  
 DATE: [Grid with 'x' marks]  
 CHECKED BY: [Grid with 'x' marks]  
 DESIGNED BY: [Grid with 'x' marks]  
 SUPERVISOR: [Grid with 'x' marks]  
 TRANSPORTATION: [Grid with 'x' marks]  
 CALIFORNIA: [Grid with 'x' marks]



**PRELIMINARY**  
NOT FOR CONSTRUCTION

**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT ALTERNATIVE 1 IMPROVEMENTS INSIDE CALTRANS RIGHT OF WAY LAYOUT**

EA 10710  
DATE 07/11/2025  
SCALE 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 CONSULTANT FUNCTIONAL SUPERVISOR  
 CALCULATED-DESIGNED BY  
 CHECKED BY  
 REVISED BY  
 DATE REVISED

**LEGEND**

	CALTRANS R/W		COUNTY R/W
	PROPOSED TRAIL CONNECTION		PROPOSED TRUCK APRON
	PROPOSED CLASS IV BIKEWAY		PROPOSED RRFB OR HAWK CROSSING TREATMENT

**"AL" LINE CURVE DATA**

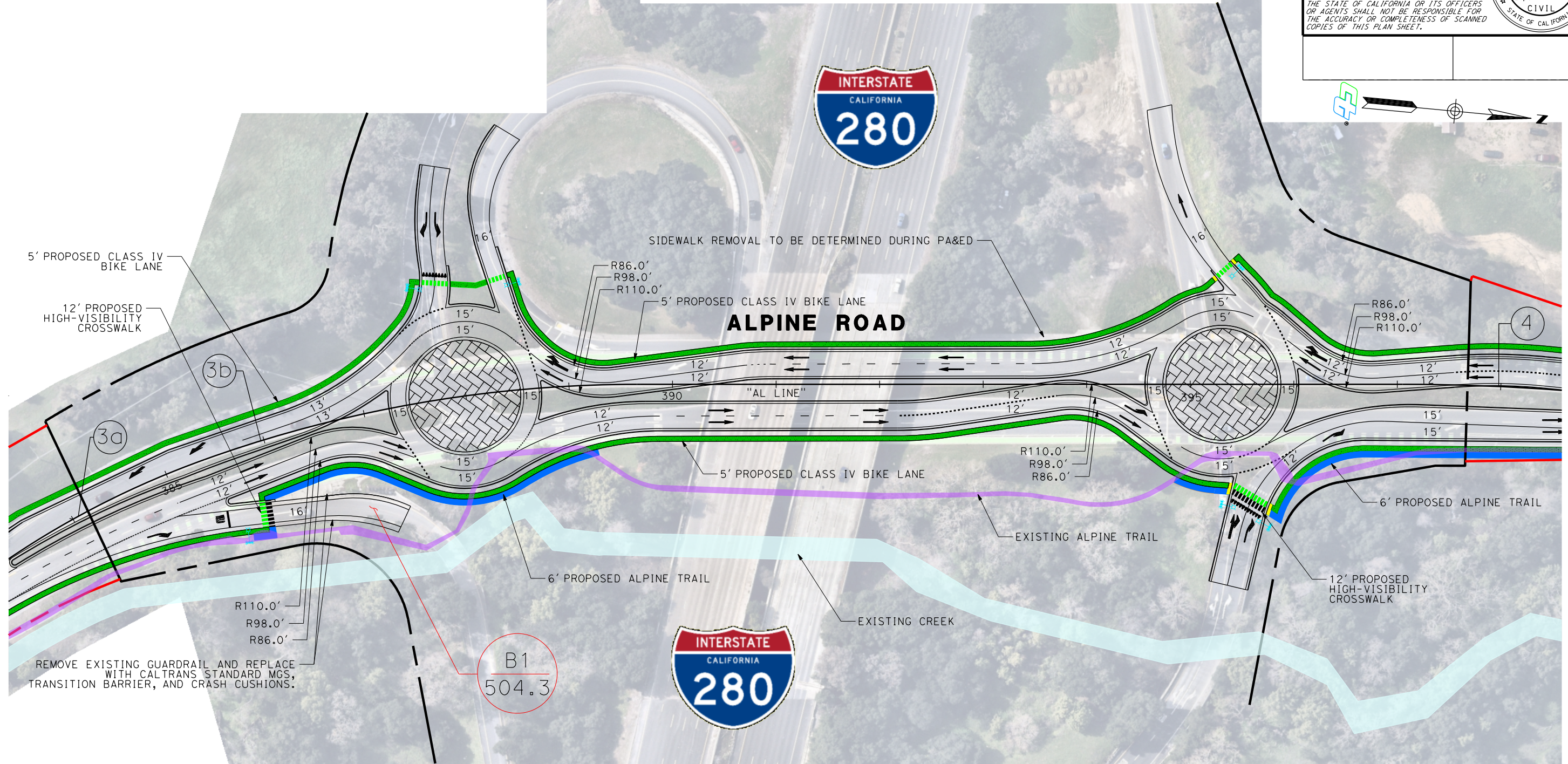
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3a	850.00'	6°44'26"	327.92'	267.78'	1975348.98	6069372.58
3b	1238.00'	4°37'41"	392.33'	426.09'	1975348.98	6069372.58
4	2050.55'	2°47'38"	92.95'	185.77'	1976557.53	6069570.55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	280	.04		

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_

PLANS APPROVAL DATE \_\_\_\_\_

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**PRELIMINARY**  
 NOT FOR CONSTRUCTION

**ALPINE ROAD CORRIDOR  
 IMPROVEMENT PROJECT  
 ALTERNATIVE 2  
 IMPROVEMENTS INSIDE  
 CALTRANS RIGHT OF WAY  
 LAYOUT**

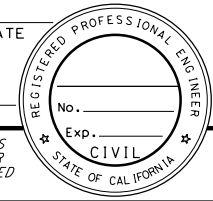
EA 10710  
 DATE 07/11/2025  
 SCALE 1" = 50'

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 00-00-00 TIME PLOTTED => \$TIME

**Attachment D**  
**Typical Sections**

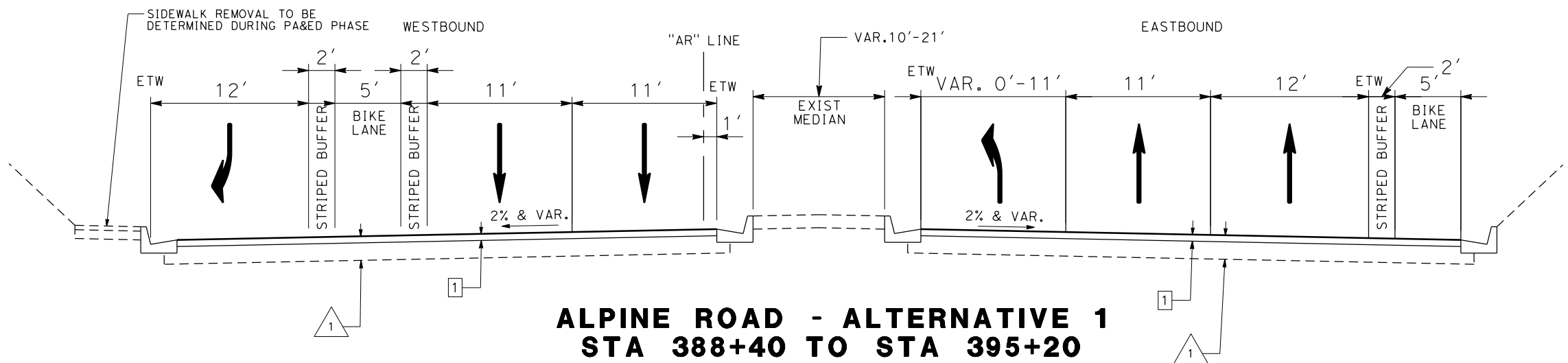
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	280	.04		

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_  
 PLANS APPROVAL DATE \_\_\_\_\_  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

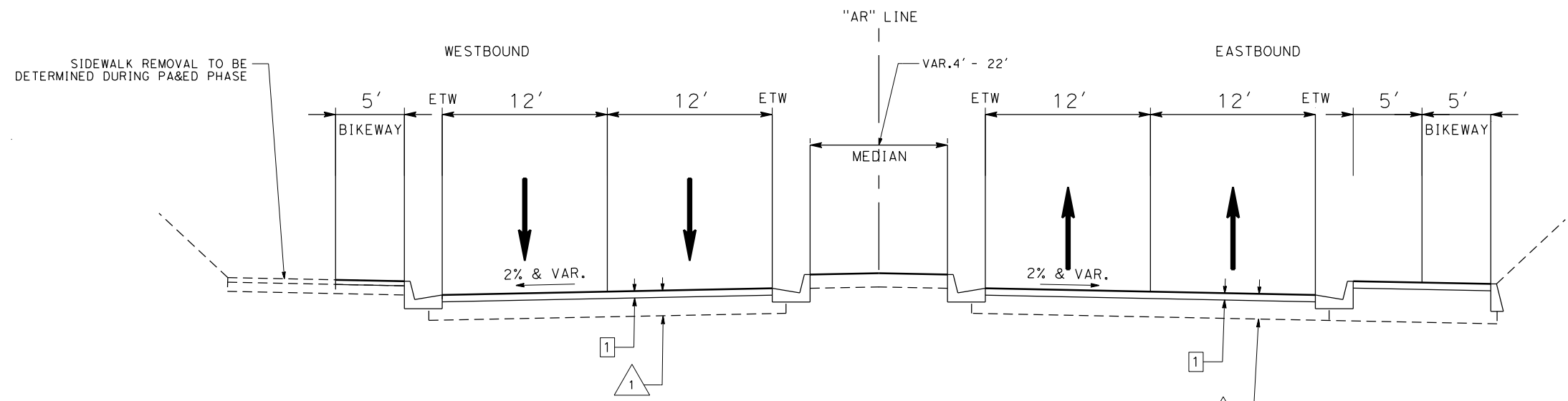


**PROPOSED PAVEMENT STRUCTURAL SECTIONS (PRELIMINARY)**

- 1 3" PROPOSED HMA GRIND AND OVERLAY
- 1 3" EXISTING HMA  
6" EXISTING AB



**ALPINE ROAD - ALTERNATIVE 1  
STA 388+40 TO STA 395+20**



**ALPINE ROAD - ALTERNATIVE 2  
STA 389+00 TO STA 394+50**

**PRELIMINARY**  
NOT FOR CONSTRUCTION

**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT**  
**ALTERNATIVE #1 & #2**  
**TYPICAL SECTIONS**

EA 10710  
DATE 07/11/2025  
SCALE 1" = 10'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Et-Corps  
 CONSULTANT FUNCTIONAL SUPERVISOR  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 REVISED BY  
 DATE REVISED

## **Attachment E**

# **Capital Outlay Project Estimates**

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

## PSR-PDS COST ESTIMATE ©

EA: 1Q710

EA: 1Q710 PID: 418000320

PID: 418000320

Alpine Road Corridor Improvement

District-County-Route: 04-SM-280

PM: 0.04

Type of Estimate : PSR-PDS Estimate

Program Code : Project has not been programmed

Project Limits : On Alpine Road Corridor from La Mesa Drive to Stowe Lane

**Project Description:**

Scope :

Alternative : Alternative #1 - Caltrans

### SUMMARY OF PROJECT COST ESTIMATE

	Current 2024 Year Cost	Escalated Cost (2031)
TOTAL ROADWAY COST	\$ 7,959,000	\$ 9,772,000
TOTAL STRUCTURES COST	\$ -	\$ -
SUBTOTAL CONSTRUCTION COST	\$ 7,959,000	\$ 9,772,000
TOTAL RIGHT OF WAY COST	\$ -	\$ -
<b>TOTAL CAPITAL OUTLAY COSTS</b>	<b>\$ 7,959,000</b>	<b>\$ 9,772,000</b>
PA/ED SUPPORT	\$ 956,000	\$ 1,024,000
PS&E SUPPORT	\$ 1,194,000	\$ 1,373,000
RIGHT OF WAY SUPPORT	\$ -	\$ -
CONSTRUCTION SUPPORT	\$ 1,194,000	\$ 1,466,000
<b>TOTAL SUPPORT COST</b>	<b>\$ 3,344,000</b>	<b>\$ 3,863,000</b>

<b>TOTAL PROJECT COST</b>	<b>\$ 11,350,000</b>	<b>\$ 13,650,000</b>
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Programmed Amount

Month / Year

Date of Estimate (Month/Year) \_\_\_\_\_ 8 / 2024

Estimated Construction Start (Month/Year) \_\_\_\_\_ 7 / 2029

Number of Working Days = 250

Estimated Mid-Point of Construction (Month/Year) \_\_\_\_\_ 1 / 2030

Estimated Construction End (Month/Year) \_\_\_\_\_ 7 / 2030

Number of Plant Establishment Days 0

**Estimated Project Schedule**

PID Approval	7/14/2025
PA/ED Approval	3/3/2027
PS&E	3/3/2029
RTL	5/3/2029
Begin Construction	7/3/2029

Reviewed by District O.E. or  
Cost Estimate Certifier

	xx/xx/xxxx	(xxx) xxx-xxxx
Office Engineer / Cost Estimate Certifier	Date	Phone

Approved by Project Manager

	xx/xx/xxxx	(xxx) xxx-xxxx
Project Manager	Date	Phone

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 418000320

## I. ROADWAY ITEMS SUMMARY

	<b>Section</b>	<b>Cost</b>
1	Earthwork	\$ 143,200
2	Pavement Structural Section	\$ 845,200
3	Drainage	\$ 197,700
4	Specialty Items	\$ 216,000
5	Environmental	\$ 686,200
6	Traffic Items	\$ 2,751,900
7	Detours	\$ -
8	Minor Items	\$ 484,100
9	Roadway Mobilization	\$ 532,500
10	Supplemental Work	\$ 297,000
11	State Furnished	\$ 79,900
12	Time-Related Overhead	\$ 133,200
13	Total Roadway Contingency	\$ 1,591,800
<b>TOTAL ROADWAY ITEMS</b>		<b>\$ 7,959,000</b>

Estimate Prepared By : Jake Schramm 8/12/2024 (650)-356-8205  
Name and Title Date Phone

Estimate Reviewed By : Prasanna Muthireddy 8/12/2024 (925) 398-4855  
Name and Title Date Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 418000320

## SECTION 1: EARTHWORK

Item code		<i>Unit</i>	<i>Quantity</i>		<i>Unit Price (\$)</i>		<i>Cost</i>	
190101	Roadway Excavation	CY	344	x	300.00	= \$	103,200	
198010	Imported Borrow (CY)	CY	0	x	225.00	= \$	-	
170105	Clearing and Grubbing (ACRE)	ACRE	1	x	40,000.00	= \$	40,000	
<b>TOTAL EARTHWORK SECTION ITEMS</b>							<b>\$</b>	<b>143,200</b>

## SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		<i>Unit</i>	<i>Quantity</i>		<i>Unit Price (\$)</i>		<i>Cost</i>	
260203	Class 2 Aggregate Base	CY	343	x	190.00	= \$	65,170	
390132	Hot Mix Asphalt (Type A)	TON	2,323	x	120.00	= \$	278,760	
731504	Minor Concrete (Curb and Gutter)	CY	128	x	1,250.00	= \$	160,000	
731521	Minor Concrete (Sidewalk)	CY	44	x	1,300.00	= \$	57,200	
731840	Remove Concrete (Curb and Gutter)	LF	6,047	x	20.00	= \$	120,940	
731780	Remove Concrete Sidewalk (SQYD)	SQYD	399	x	90.00	= \$	35,910	
721431	Concrete (Concrete Apron)	CY	0	x	1,500.00	= \$	-	
731511	Minor Concrete (Island Paving)	CY	0	x	500.00	= \$	-	
398300	Remove Base and Surfacing	CY	633	x	130.00	= \$	82,290	
398200	Cold Plane Asphalt Concrete Pavement	SQYD	12,826	x	3.50	= \$	44,891	
<b>TOTAL PAVEMENT STRUCTURAL SECTION ITEMS</b>							<b>\$</b>	<b>845,200</b>

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 418000320

## SECTION 3: DRAINAGE

Item code		<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>
XXXXXX	Project Drainage	LS	1	x 197,680.00 = \$	197,680
<b>TOTAL DRAINAGE ITEMS</b>					<b>\$ 197,700</b>

## SECTION 4: SPECIALTY ITEMS

Item code		<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>
070030	Lead Compliance Plan	LS	1	x 6,000.00 = \$	6,000
080060	Level 2 Critical Path Method Schedule	LS	1	x 10,000.00 = \$	10,000
XXXXXX	Retaining Wall	SQ FT	0	x 400.00 = \$	-
XXXX	Misc Bike/Ped Improvements	LS	1	x 200,000.00 = \$	200,000
<b>TOTAL SPECIALTY ITEMS</b>					<b>\$ 216,000</b>

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 418000320

## SECTION 5: ENVIRONMENTAL

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### 5A - ENVIRONMENTAL MITIGATION

Item code	Unit	Quantity	Unit Price (\$)	Cost
XXXXXX Environmental Mitigation	LS	1	x 197,680.00 = \$	197,680
<i>Subtotal Environmental Mitigation</i>				<b>\$ 197,680</b>

### 5B - LANDSCAPE AND IRRIGATION

Item code	Unit	Quantity	Unit Price (\$)	Cost
20XXXX Landscaping	LS	1	x 98,840.00 = \$	98,840
<i>Subtotal Landscape and Irrigation</i>				<b>\$ 98,840</b>

### 5C - EROSION CONTROL

Item code	Unit	Quantity	Unit Price (\$)	Cost
XXXXXX Erosion Control	LS	1	x 29,652.00 = \$	29,652
<i>Subtotal Erosion Control</i>				<b>\$ 29,652</b>

### 5D - NPDES

Item code	Unit	Quantity	Unit Price (\$)	Cost
130300 Prepare SWPPP	LS	1	x 10,000.00 = \$	10,000
130100 Job Site Management	LS	1	x 50,000.00 = \$	50,000
XXXXXX Construction BMP's	LS	1	x 300,000.00 = \$	300,000
<i>Subtotal NPDES</i>				<b>\$ 360,000</b>

<b>TOTAL ENVIRONMENTAL</b>	<b>\$ 686,200</b>
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### Supplemental Work for NPDES

066595 Water Pollution Control Maintenance Sharing*	LS	1	x 10,000.00 = \$	10,000
066596 Additional Water Pollution Control**	LS	1	x 10,000.00 = \$	10,000
066597 Storm Water Sampling and Analysis***	LS	1	x 10,000.00 = \$	10,000
<i>Subtotal Supplemental Work for NDPS</i>				<b>\$ 30,000</b>

\*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

\*\*Applies to both SWPPPs and WPCP projects.

\*\*\* Applies only to project with SWPPPs.

**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT**

EA: 1Q710 PID: 418000320

**SECTION 6: TRAFFIC ITEMS**

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**6A - Traffic Electrical**

Item code	Unit	Quantity	Unit Price (\$)	=	\$	Cost
870400 Signal and Lighting System (Alpine Road and Interstate 280)	EA	2	1,000,000.00	=	\$	2,000,000
						<u>Subtotal Traffic Electrical \$ 2,000,000</u>

**6B - Traffic Signing and Striping**

Item code	Unit	Quantity	Unit Price (\$)	=	\$	Cost
5602XX Signing	LS	1	10,000.00	=	\$	10,000
15XXXX Traffic Delineation (Pavement Marking & Striping)	LS	1	45,000.00	=	\$	45,000
839752 Remove Guardrail	LF	190	20.00	=	\$	3,800
832007 Midwest Guardrail System (Wood Post)	LF	190	95.00	=	\$	18,050
839745 Concrete Barrier Transition	LF	40	600.00	=	\$	24,000
832070 Vegetation Control (Minor Concerte)	SQYD	120	200.00	=	\$	24,000
8201XX Object Markers and Delineators	LS	1	5,000.00	=	\$	5,000
XXXXXX Alternative Crash Cushion System	LS	1	100,000.00	=	\$	100,000
						<u>Subtotal Traffic Signing and Striping \$ 229,850</u>

**6C - Traffic Management Plan**

Item code	Unit	Quantity	Unit Price (\$)	=	\$	Cost
12865X Traffic Management Plan - Public Information	LS	1	24,000.00	=	\$	24,000
120090 Traffic Management Plan - Construction Area Signs	LS	1	10,000.00	=	\$	10,000
12865X Traffic Management Plan - Incident Management	LS	1	285,000.00	=	\$	285,000
12865X Traffic Management Plan - Construction Strategies/Stage Construction and Traffic Handling	LS	1	143,000.00	=	\$	143,000
12865X Traffic Management Plan - Portable Changeable Message Sign	LS	1	60,000.00	=	\$	60,000
						<u>Subtotal Traffic Management Plan \$ 522,000</u>

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<b>TOTAL TRAFFIC ITEMS</b>	<b>\$ 2,751,900</b>
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# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 418000320

## SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code		<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>	
XXXXXX	Detours	LS	0	x 0 = \$	-	
					<b>TOTAL DETOURS</b>	<b>\$ -</b>

\* Includes constructing, maintaining, and removal

	<b>TOTAL DETOURS</b>	<b>\$ -</b>
		<b>SUBTOTAL SECTIONS 1 through 7</b>
	<b>\$</b>	<b>4,840,200</b>

## SECTION 8: MINOR ITEMS

### 8A - Americans with Disabilities Act Items

ADA Items

2.0%      \$      96,804

### 8B - Bike Path Items

Bike Path Items

0.0%      \$      -

### 8C - Other Minor Items

Other Minor Items

8.0%      \$      387,216

Total of Section 1-7      \$      4,840,200      x      10.0%      =      \$      484,020

	<b>TOTAL MINOR ITEMS</b>	<b>\$      484,100</b>
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## SECTIONS 9: ROADWAY MOBILIZATION

<b>Item code</b>						
999990	Total Section 1-8	\$	5,324,300	x	10%	= \$      532,430
					<b>TOTAL ROADWAY MOBILIZATION</b>	<b>\$      532,500</b>

## SECTION 10: SUPPLEMENTAL WORK

Item code		<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>	
066670	Payment Adjustments For Price Index Fluctuations	LS	0	x 0.00 = \$	-	
066094	Value Analysis	LS	0	x 0.00 = \$	-	
<i>Cost of NPDES Supplemental Work specified in Section 5D</i>					<b>= \$      30,000</b>	
Total Section 1-8		\$	5,324,300	5%	= \$      267,000	
					<b>TOTAL SUPPLEMENTAL WORK</b>	<b>\$      297,000</b>

**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT**

EA: 1Q710 PID: 418000320

**SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES**

Item code	<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>
Total Section 1-8	\$	5,324,300	1.5%	= \$ 79,900
<b>TOTAL STATE FURNISHED</b>				<b>\$79,900</b>

**SECTION 12: TIME-RELATED OVERHEAD**

Total of Roadway and Structures Contract Items excluding Mobilization \$5,324,300 (used to calculate TRO)  
 Total Construction Cost (excluding TRO and Contingency) \$6,233,700 (used to check if project is greater than \$5 million excluding contingency)

Estimated Time-Related Overhead (TRO) Percentage (0% to 10%) = 3%

Item code	<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>
090100 Time-Related Overhead	WD	250	X \$533	= \$133,200
<b>TOTAL TIME-RELATED OVERHEAD</b>				<b>\$133,200</b>

**SECTION 13: ROADWAY CONTINGENCY**

Total Section 1-12	\$	6,366,900	x <span style="border: 1px solid black; padding: 2px;">25%</span>	= \$1,591,800
<b>TOTAL CONTINGENCY*</b>				<b>\$1,591,800</b>

**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT**

EA: 1Q710 PID: 418000320

**II. STRUCTURE ITEMS**

1000000

DATE OF ESTIMATE					
Name					
Bridge Number					
Structure Type					
Width (Feet) [out to out]					
Total Length (Feet)					
Total Area (Square Feet)					
Structure Depth (Feet)					
Footing Type (pile or spread)					
Cost Per Square Foot					
<b>COST OF EACH</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>

DATE OF ESTIMATE					
Name					
Bridge Number					
Structure Type					
Width (Feet) [out to out]					
Total Length (Feet)					
Total Area (Square Feet)					
Structure Depth (Feet)					
Footing Type (pile or spread)					
Cost Per Square Foot					
<b>COST OF EACH</b>	<b>\$0</b>				

<b>TOTAL COST OF BRIDGES</b>	<b>\$0</b>
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<b>TOTAL COST OF BUILDINGS</b>	<b>\$0</b>
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<b>STRUCTURES MOBILIZATION</b>	10%	<b>\$0</b>
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<b>STRUCTURES CONTINGENCY*</b>	25%	<b>\$0</b>
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<b>TOTAL COST OF STRUCTURES</b>	<b>\$0</b>
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Estimate Prepared By: \_\_\_\_\_  
XXXXXXXXXXXXXXXXXXXXX ----- Division of Structures

\_\_\_\_\_ Date

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 418000320

## III. RIGHT OF WAY

Fill in all of the available information from the Right of Way Data Sheet.

A)	A1) Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees		\$	0
	A2) SB-1210		\$	0
B)	Acquisition of Offsite Mitigation		\$	0
C)	C1) Utility Relocation (Local Agency Share)		\$	0
	C2) Potholing (Design Phase)		\$	0
D)	Railroad Acquisition		\$	0
E)	Clearance / Demolition		\$	0
F)	Relocation Assistance (RAP and/or Last Resort Housing Costs)		\$	0
G)	Title and Escrow		\$	0
H)	Environmental Review		\$	0
I)	Condemnation Settlements	<u>0%</u>	\$	0
J)	Design Appreciation Factor	<u>0%</u>	\$	0
K)	Utility Relocation (Construction Cost)		\$	0

L) TOTAL RIGHT OF WAY ESTIMATE \$0

M) TOTAL R/W ESTIMATE: Escalated \$0

N) RIGHT OF WAY SUPPORT \$0

Support Cost Estimate Prepared By \_\_\_\_\_  
Project Coordinator<sup>1</sup> Phone

Utility Estimate Prepared By \_\_\_\_\_  
Utility Coordinator<sup>2</sup> Phone

R/W Acquisition Estimate Prepared By \_\_\_\_\_  
Right of Way Estimator<sup>3</sup> Phone

Note: Items G & H applied to items A + B

<sup>1</sup> When estimate has Support Costs only

<sup>2</sup> When estimate has Utility Relocation

<sup>3</sup> When R/W Acquisition is required

**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT**

**PSR-PDS COST ESTIMATE**

©

EA: 1Q710  
PID: 418000320

EA: 1Q710 PID: 418000320  
*Alpine Road Corridor Improvement*

District-County-Route: 04-SM-280  
PM: 0.04

Type of Estimate : PSR-PDS Estimate  
Program Code : Project has not been programmed  
Project Limits : On Alpine Road Corridor from La Mesa Drive to Stowe Lane

Project Description:  
Scope :  
Alternative : Alternative #1

**SUMMARY OF PROJECT COST ESTIMATE**

	<u>Current 2024 Year Cost</u>	<u>Escalated Cost (2031)</u>
TOTAL ROADWAY COST	\$ 18,140,000	\$ 22,271,000
TOTAL STRUCTURES COST	\$ -	\$ -
SUBTOTAL CONSTRUCTION COST	\$ 18,140,000	\$ 22,271,000
TOTAL RIGHT OF WAY COST	\$ 43,700	\$ 44,000
<b>TOTAL CAPITAL OUTLAY COSTS</b>	<b>\$ 18,184,000</b>	<b>\$ 22,315,000</b>
PA/ED SUPPORT	\$ 2,183,000	\$ 2,339,000
PS&E SUPPORT	\$ 2,728,000	\$ 3,137,000
RIGHT OF WAY SUPPORT	\$ 49,000	\$ 60,000
CONSTRUCTION SUPPORT	\$ 2,721,000	\$ 3,341,000
<b>TOTAL SUPPORT COST</b>	<b>\$ 7,681,000</b>	<b>\$ 8,877,000</b>

<b>TOTAL PROJECT COST</b>	<b>\$ 25,900,000</b>	<b>\$ 31,200,000</b>
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Programmed Amount

Month / Year

Date of Estimate (Month/Year) \_\_\_\_\_ 8 / 2024

Estimated Construction Start (Month/Year) \_\_\_\_\_ 7 / 2029

Number of Working Days = 250

Estimated Mid-Point of Construction (Month/Year) \_\_\_\_\_ 1 / 2030

Estimated Construction End (Month/Year) \_\_\_\_\_ 7 / 2030

Number of Plant Establishment Days 0

**Estimated Project Schedule**

PID Approval	7/14/2025
PA/ED Approval	3/3/2027
PS&E	3/3/2029
RTL	5/3/2029
Begin Construction	7/3/2029

Reviewed by District O.E. or  
Cost Estimate Certifier

\_\_\_\_\_ (xxx) xxx-xxxx  
Office Engineer / Cost Estimate Certifier Date Phone

Approved by Project Manager

\_\_\_\_\_ (xxx) xxx-xxxx  
Project Manager Date Phone



**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT**

EA: 1Q710 PID: 418000320

**SECTION 1: EARTHWORK**

Item code	Unit	Quantity	Unit Price (\$)			Cost
190101 Roadway Excavation	CY	1,320	x	300.00	= \$	396,000
198010 Imported Borrow (CY)	CY	0	x	225.00	= \$	-
170105 Clearing and Grubbing (ACRE)	ACRE	1	x	80,000.00	= \$	80,000
<b>TOTAL EARTHWORK SECTION ITEMS</b>						<b>\$ 476,000</b>

**SECTION 2: PAVEMENT STRUCTURAL SECTION**

Item code	Unit	Quantity	Unit Price (\$)			Cost
260203 Class 2 Aggregate Base	CY	1,090	x	190.00	= \$	207,100
390132 Hot Mix Asphalt (Type A)	TON	9,390	x	120.00	= \$	1,126,800
731504 Minor Concrete (Curb and Gutter)	CY	230	x	1,250.00	= \$	287,500
731521 Minor Concrete (Sidewalk)	CY	80	x	1,300.00	= \$	104,000
731840 Remove Concrete (Curb and Gutter)	LF	7,580	x	20.00	= \$	151,600
731780 Remove Concrete Sidewalk (SQYD)	SQYD	660	x	90.00	= \$	59,400
721431 Concrete (Concrete Apron)	CY	0	x	1,500.00	= \$	-
731511 Minor Concrete (Island Paving)	CY	0	x	500.00	= \$	-
398300 Remove Base and Surfacing	CY	1,290	x	130.00	= \$	167,700
398200 Cold Plane Asphalt Concrete Pavement	SQYD	52,910	x	3.50	= \$	185,185
<b>TOTAL PAVEMENT STRUCTURAL SECTION ITEMS</b>						<b>\$ 2,289,300</b>

**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT**

EA: 1Q710 PID: 418000320

**SECTION 3: DRAINAGE**

Item code	Unit	Quantity	Unit Price (\$)	Cost
XXXXXX Project Drainage	LS	1	x 553,060.00 = \$	553,060
<b>TOTAL DRAINAGE ITEMS</b>				<b>\$ 553,100</b>

**SECTION 4: SPECIALTY ITEMS**

Item code	Unit	Quantity	Unit Price (\$)	Cost
070030 Lead Compliance Plan	LS	1	x 12,000.00 = \$	12,000
080060 Level 2 Critical Path Method Schedule	LS	1	x 20,000.00 = \$	20,000
XXXXXX Retaining Wall	SQ FT	2,400	x 400.00 = \$	960,000
XXXXXX Misc Bike/Ped Improvements	LS	1	x 800,000.00 = \$	800,000
<b>TOTAL SPECIALTY ITEMS</b>				<b>\$ 1,792,000</b>

**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT**

EA: 1Q710 PID: 418000320

**SECTION 5: ENVIRONMENTAL**

**5A - ENVIRONMENTAL MITIGATION**

Item code	Unit	Quantity	Unit Price (\$)	Cost
XXXXXX Environmental Mitigation	LS	1	x 553,060.00	= \$ 553,060
				<i>Subtotal Environmental Mitigation \$ 553,060</i>

**5B - LANDSCAPE AND IRRIGATION**

Item code	Unit	Quantity	Unit Price (\$)	Cost
20XXXX Landscaping	LS	1	x 276,530.00	= \$ 276,530
				<i>Subtotal Landscape and Irrigation \$ 276,530</i>

**5C - EROSION CONTROL**

Item code	Unit	Quantity	Unit Price (\$)	Cost
XXXXXX Erosion Control	LS	1	x 82,959.00	= \$ 82,959
				<i>Subtotal Erosion Control \$ 82,959</i>

**5D - NPDES**

Item code	Unit	Quantity	Unit Price (\$)	Cost
130300 Prepare SWPPP	LS	2	x 10,000.00	= \$ 20,000
130100 Job Site Management	LS	2	x 50,000.00	= \$ 100,000
XXXXXX Construction BMP's	LS	2	x 300,000.00	= \$ 600,000
				<i>Subtotal NPDES \$ 720,000</i>

<b>TOTAL ENVIRONMENTAL</b>	<b>\$ 1,632,600</b>
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**Supplemental Work for NPDES**

066595 Water Pollution Control Maintenance Sharing*	LS	2	x 10,000.00	= \$ 20,000
066596 Additional Water Pollution Control**	LS	2	x 10,000.00	= \$ 20,000
066597 Storm Water Sampling and Analysis***	LS	2	x 10,000.00	= \$ 20,000
				<i>Subtotal Supplemental Work for NDPS \$ 60,000</i>

\*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

\*\*Applies to both SWPPPs and WPCP projects.

\*\*\* Applies only to project with SWPPPs.

**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT**

EA: 1Q710 PID: 418000320

**SECTION 6: TRAFFIC ITEMS**

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**6A - Traffic Electrical**

Item code	Unit	Quantity	Unit Price (\$)	Cost
870400 Signal and Lighting System (Full Project)	LS	1	x 3,200,000.00 = \$	3,200,000
				<u>Subtotal Traffic Electrical \$ 3,200,000</u>

**6B - Traffic Signing and Striping**

Item code	Unit	Quantity	Unit Price (\$)	Cost
5602XX Signing	LS	1	x 19,000.00 = \$	19,000
15XXXX Traffic Delineation (Pavement Marking & Striping)	LS	1	x 335,000.00 = \$	335,000
839752 Remove Guardrail	LF	190	x 20.00 = \$	3,800
832006 Midwest Guardrail System (Wood Post)	LF	190	x 95.00 = \$	18,050
839745 Concrete Barrier Transition	LF	40	x 600.00 = \$	24,000
832070 Vegation Control (Minor Concrete)	SQYD	120	x 200.00 = \$	24,000
8201XX Object Markers and Delineators	LS	1	x 5,000.00 = \$	5,000
XXXXXX Alternative Crash Cushion System	LS	1	x 100,000.00 = \$	100,000
				<u>Subtotal Traffic Signing and Striping \$ 528,850</u>

**6C - Traffic Management Plan**

Item code	Unit	Quantity	Unit Price (\$)	Cost
12865X Traffic Management Plan - Public Information	LS	1	x 24,000.00 = \$	24,000
120090 Traffic Management Plan - Construction Area Signs	LS	1	x 10,000.00 = \$	10,000
12865X Traffic Management Plan - Incident Management	LS	1	x 285,000.00 = \$	285,000
12865X Traffic Management Plan - Construction Strategies/Stage Construction and Traffic Handling	LS	1	x 143,000.00 = \$	143,000
12865X Traffic Management Plan - Portable Changeable Message Sign	LS	1	x 60,000.00 = \$	60,000
				<u>Subtotal Traffic Management Plan \$ 522,000</u>

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<b>TOTAL TRAFFIC ITEMS</b>	<b>\$ 4,250,900</b>
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**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT**

EA: 1Q710 PID: 418000320

**SECTION 7: DETOURS**

Includes constructing, maintaining, and removal

Item code	Unit	Quantity	Unit Price (\$)	Cost
XXXXXX Detours	LS	0	x 50,000 = \$	-
				<b>TOTAL DETOURS \$ -</b>

\* Includes constructing, maintaining, and removal

SUBTOTAL SECTIONS 1 through 7 \$ 10,993,900

**SECTION 8: MINOR ITEMS**

**8A - Americans with Disabilities Act Items**

ADA Items 2.0% \$ 219,878

**8B - Bike Path Items**

Bike Path Items 0.0% \$ -

**8C - Other Minor Items**

Other Minor Items 8.0% \$ 879,512

Total of Section 1-7 \$ 10,993,900 x 10.0% = \$ 1,099,390

**TOTAL MINOR ITEMS \$ 1,099,400**

**SECTIONS 9: ROADWAY MOBILIZATION**

999990	Total Section 1-8	\$ 12,093,300	x 10%	= \$ 1,209,330
				<b>TOTAL ROADWAY MOBILIZATION \$ 1,209,400</b>

**SECTION 10: SUPPLEMENTAL WORK**

Item code	Unit	Quantity	Unit Price (\$)	Cost
066670 Payment Adjustments For Price Index Fluctuations	LS	0	x 200,000.00 = \$	-
066094 Value Analysis	LS	0	x 10,000.00 = \$	-
				<i>Cost of NPDES Supplemental Work specified in Section 5D = \$ 60,000</i>
Total Section 1-8		\$ 12,093,300	5%	= \$ 605,000
				<b>TOTAL SUPPLEMENTAL WORK \$ 665,000</b>

**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT**

EA: 1Q710 PID: 418000320

**SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES**

Item code	<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>
Total Section 1-8	\$	12,093,300	1.5%	= \$ 181,400
				<b>TOTAL STATE FURNISHED \$181,400</b>

**SECTION 12: TIME-RELATED OVERHEAD**

Total of Roadway and Structures Contract Items excluding Mobilization \$12,093,300 (used to calculate TRO)  
 Total Construction Cost (excluding TRO and Contingency) \$14,149,100 (used to check if project is greater than \$5 million excluding contingency)

Estimated Time-Related Overhead (TRO) Percentage (0% to 10%) = **3%**

Item code	<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>
090100 Time-Related Overhead	WD	250	X \$1,451	= \$362,800
				<b>TOTAL TIME-RELATED OVERHEAD \$362,800</b>

**SECTION 13: ROADWAY CONTINGENCY**

Total Section 1-12 \$ 14,511,900 x **25%** = \$3,628,000

**TOTAL CONTINGENCY\* \$3,628,000**

**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT**

EA: 1Q710 PID: 418000320

**II. STRUCTURE ITEMS**

4

0

DATE OF ESTIMATE					
Name					
Bridge Number					
Structure Type					
Width (Feet) [out to out]					
Total Length (Feet)					
Total Area (Square Feet)					
Structure Depth (Feet)					
Footing Type (pile or spread)					0
Cost Per Square Foot					
<b>COST OF EACH</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>

DATE OF ESTIMATE					
Name					
Bridge Number					
Structure Type					
Width (Feet) [out to out]					
Total Length (Feet)					
Total Area (Square Feet)					
Structure Depth (Feet)					
Footing Type (pile or spread)					
Cost Per Square Foot					
<b>COST OF EACH</b>	<b>\$0</b>				

<b>TOTAL COST OF BRIDGES</b>	<b>\$0</b>
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<b>TOTAL COST OF BUILDINGS</b>	<b>\$0</b>
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<b>STRUCTURES MOBILIZATION</b>	10%	<b>\$0</b>
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	25%	<b>\$0</b>
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<b>TOTAL COST OF STRUCTURES</b>	<b>\$0</b>
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Estimate Prepared By: \_\_\_\_\_  
XXXXXXXXXXXXXXXXXXXXX ----- Division of Structures

\_\_\_\_\_ Date

**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT**

EA: 1Q710 PID: 418000320

**III. RIGHT OF WAY**

Fill in all of the available information from the Right of Way Data Sheet.

A)	A1)	Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees	\$	11,700
	A2)	SB-1210	\$	0
B)		Acquisition of Offsite Mitigation	\$	0
C)	C1)	Utility Relocation (Local Agency Share)	\$	30,000
	C2)	Potholing (Design Phase)	\$	0
D)		Railroad Acquisition	\$	0
E)		Clearance / Demolition	\$	0
F)		Relocation Assistance (RAP and/or Last Resort Housing Costs)	\$	0
G)		Title and Escrow	\$	2,000
H)		Environmental Review	\$	0
I)		Condemnation Settlements	\$	0%
J)		Design Appreciation Factor	\$	0%
K)		Utility Relocation (Construction Cost)	\$	0

L) 

<b>TOTAL RIGHT OF WAY ESTIMATE</b>	<b>\$43,700</b>
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M) 

<b>TOTAL R/W ESTIMATE: Escalated</b>	<b>\$44,000</b>
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N) 

<b>RIGHT OF WAY SUPPORT</b>	<b>\$49,000</b>
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Support Cost Estimate  
Prepared By \_\_\_\_\_ Project Coordinator<sup>1</sup> \_\_\_\_\_ Phone \_\_\_\_\_

Utility Estimate Prepared  
By \_\_\_\_\_ Utility Coordinator<sup>2</sup> \_\_\_\_\_ Phone \_\_\_\_\_

R/W Acquisition Estimate  
Prepared By \_\_\_\_\_ Right of Way Estimator<sup>3</sup> \_\_\_\_\_ Phone \_\_\_\_\_

Note: Items G & H applied to items A + B

<sup>1</sup> When estimate has Support Costs only

<sup>2</sup> When estimate has Utility Relocation

<sup>3</sup> When R/W Acquisition is required

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

## PSR-PDS COST ESTIMATE

©

EA: 1Q710

EA: 1Q710 PID: 418000320

PID: 418000320

*Alpine Road Corridor Improvement*

District-County-Route: 04-SM-280

PM: 0.04

Type of Estimate : PSR-PDS Estimate

Program Code : Project has not been programmed

Project Limits : On Alpine Road Corridor from La Mesa Drive to Stowe Lane

**Project Description:**

Scope :

Alternative : Alternative #2 - Caltrans

### SUMMARY OF PROJECT COST ESTIMATE

	Current 2024 Year Cost	Escalated Cost (2031)
TOTAL ROADWAY COST	\$ 8,389,000	\$ 10,592,000
TOTAL STRUCTURES COST	\$ -	\$ -
SUBTOTAL CONSTRUCTION COST	\$ 8,389,000	\$ 10,592,000
TOTAL RIGHT OF WAY COST	\$ -	\$ -
<b>TOTAL CAPITAL OUTLAY COSTS</b>	<b>\$ 8,389,000</b>	<b>\$ 10,592,000</b>
PA/ED SUPPORT	\$ 1,007,000	\$ 1,079,000
PS&E SUPPORT	\$ 1,259,000	\$ 1,448,000
RIGHT OF WAY SUPPORT	\$ -	\$ -
CONSTRUCTION SUPPORT	\$ 1,259,000	\$ 1,589,000
<b>TOTAL SUPPORT COST</b>	<b>\$ 3,525,000</b>	<b>\$ 4,116,000</b>

<b>TOTAL PROJECT COST</b>	<b>\$ 11,950,000</b>	<b>\$ 14,750,000</b>
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Programmed Amount

Month / Year

Date of Estimate (Month/Year) \_\_\_\_\_ 8 / 2024

Estimated Construction Start (Month/Year) \_\_\_\_\_ 7 / 2029

Number of Working Days = 375

Estimated Mid-Point of Construction (Month/Year) \_\_\_\_\_ 4 / 2030

Estimated Construction End (Month/Year) \_\_\_\_\_ 1 / 2031

Number of Plant Establishment Days 0

**Estimated Project Schedule**

PID Approval	7/14/2025
PA/ED Approval	3/3/2027
PS&E	3/3/2029
RTL	5/3/2029
Begin Construction	7/3/2029

Reviewed by District O.E. or  
Cost Estimate Certifier

	xx/xx/xxxx	(xxx) xxx-xxxx
Office Engineer / Cost Estimate Certifier	Date	Phone

Approved by Project Manager

	xx/xx/xxxx	(xxx) xxx-xxxx
Project Manager	Date	Phone

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 418000320

## SECTION 1: EARTHWORK

Item code	Unit	Quantity	Unit Price (\$)	=	\$	Cost
190101 Roadway Excavation	CY	793	x 300.00	=	\$	237,900
198010 Imported Borrow (CY)	CY	93	x 225.00	=	\$	20,925
170105 Clearing and Grubbing (ACRE)	ACRE	1	x 40,000.00	=	\$	40,000
<b>TOTAL EARTHWORK SECTION ITEMS</b>						<b>\$ 298,900</b>

## SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code	Unit	Quantity	Unit Price (\$)	=	\$	Cost
260203 Class 2 Aggregate Base	CY	886	x 150.00	=	\$	132,900
390132 Hot Mix Asphalt (Type A)	TON	2,196	x 120.00	=	\$	263,520
731504 Minor Concrete (Curb and Gutter)	CY	408	x 1,000.00	=	\$	408,000
731521 Minor Concrete (Sidewalk)	CY	64	x 1,100.00	=	\$	70,400
731840 Remove Concrete (Curb and Gutter)	LF	5,357	x 15.00	=	\$	80,355
731780 Remove Concrete Sidewalk (SQYD)	SQYD	481	x 90.00	=	\$	43,290
721431 Concrete (Concrete Apron)	CY	26	x 1,500.00	=	\$	39,000
731511 Minor Concrete (Island Paving)	CY	533	x 500.00	=	\$	266,500
398300 Remove Base and Surfacing	CY	1,500	x 125.00	=	\$	187,500
398200 Cold Plane Asphalt Concrete Pavement	SQYD	9,433	x 4.50	=	\$	42,449
<b>TOTAL PAVEMENT STRUCTURAL SECTION ITEMS</b>						<b>\$ 1,534,000</b>

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 418000320

## SECTION 3: DRAINAGE

Item code		<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>
XXXXXX	Project Drainage	LS	1	x 366,580.00 = \$	366,580
<b>TOTAL DRAINAGE ITEMS</b>					<b>\$ 366,600</b>
<b>100000</b>					

## SECTION 4: SPECIALTY ITEMS

Item code		<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>
070030	Lead Compliance Plan	LS	1	x 6,000.00 = \$	6,000
080060	Level 2 Critical Path Method Schedule	LS	1	x 10,000.00 = \$	10,000
XXXX	Retaining Wall	SQ FT	0	x 400 = \$	-
XXXX	Misc Bike/Ped Improvements	LS	1	x 300,000.00 = \$	300,000
<b>TOTAL SPECIALTY ITEMS</b>					<b>\$ 316,000</b>

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 418000320

## SECTION 5: ENVIRONMENTAL

### 5A - ENVIRONMENTAL MITIGATION

Item code	Unit	Quantity	Unit Price (\$)	Cost
XXXXXX Environmental Mitigation	LS	1	366,580.00 = \$	366,580
<i>Subtotal Environmental Mitigation</i>				<i>\$ 366,580</i>

### 5B - LANDSCAPE AND IRRIGATION

Item code	Unit	Quantity	Unit Price (\$)	Cost
20XXXX Landscaping	LS	1	549,870.00 = \$	549,870
<i>Subtotal Landscape and Irrigation</i>				<i>\$ 549,870</i>

### 5C - EROSION CONTROL

Item code	Unit	Quantity	Unit Price (\$)	Cost
XXXXXX Erosion Control	LS	1	54,987.00 = \$	54,987
<i>Subtotal Erosion Control</i>				<i>\$ 54,987</i>

### 5D - NPDES

Item code	Unit	Quantity	Unit Price (\$)	Cost
130300 Prepare SWPPP	LS	1	10,000.00 = \$	10,000
130100 Job Site Management	LS	1	50,000.00 = \$	50,000
XXXXXX Construction BMP's	LS	1	300,000.00 = \$	300,000
<i>Subtotal NPDES</i>				<i>\$ 360,000</i>

<b>TOTAL ENVIRONMENTAL</b>	<b>\$ 1,331,500</b>
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### Supplemental Work for NPDES

066595 Water Pollution Control Maintenance Sharing*	LS	1	10,000.00 = \$	10,000
066596 Additional Water Pollution Control**	LS	1	10,000.00 = \$	10,000
066597 Storm Water Sampling and Analysis***	LS	1	10,000.00 = \$	10,000
<i>Subtotal Supplemental Work for NDPS</i>				<i>\$ 30,000</i>

\*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

\*\*Applies to both SWPPPs and WPCP projects.

\*\*\* Applies only to project with SWPPPs.

**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT**

EA: 1Q710 PID: 418000320

**SECTION 6: TRAFFIC ITEMS**

**6A - Traffic Electrical**

Item code	Unit	Quantity	Unit Price (\$)	Cost
870200 Lighting System (Alpine Road and Interstate 280)	EA	2	x 100,000.00 = \$	200,000
				<u>Subtotal Traffic Electrical \$ 200,000</u>

**6B - Traffic Signing and Striping**

Item code	Unit	Quantity	Unit Price (\$)	Cost
5602XX Signing	LS	1	x 40,000.00 = \$	40,000
15XXXX Traffic Delineation (Pavement Marking & Striping)	LS	1	x 35,000.00 = \$	35,000
839752 Remove Guardrail	LF	190	x 20.00 = \$	3,800
832007 Midwest Guardrail System (Wood Post)	LF	190	x 95.00 = \$	18,050
839745 Concrete Barrier Transition	LF	40	x 600.00 = \$	24,000
832070 Vegetation Control (Minor Concrete)	SQYD	120	x 200.00 = \$	24,000
8201XX Object Markers and Delineators	LS	1	x 5,000.00 = \$	5,000
XXXXXX Alternative Crash Cushion System	LS	1	x 100,000.00 = \$	100,000
				<u>Subtotal Traffic Signing and Striping \$ 249,850</u>

**6C - Traffic Management Plan**

Item code	Unit	Quantity	Unit Price (\$)	Cost
12865X Traffic Management Plan - Public Information	LS	1	x 24,000.00 = \$	24,000
120090 Traffic Management Plan - Construction Area Signs	LS	1	x 10,000.00 = \$	10,000
12865X Traffic Management Plan - Incident Management	LS	1	x 405,000.00 = \$	405,000
12865X Traffic Management Plan - Construction Strategies/Stage Construction and Traffic Handling	LS	1	x 203,000.00 = \$	203,000
12865X Traffic Management Plan - Portable Changeable Message Sign	LS	1	x 60,000.00 = \$	60,000
				<u>Subtotal Traffic Management Plan \$ 702,000</u>

<b>TOTAL TRAFFIC ITEMS \$ 1,151,900</b>
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# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 418000320

## SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code	<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>
XXXXXX Detours	LS	0	x 0	= \$ -
				<b>TOTAL DETOURS \$ -</b>

\* Includes constructing, maintaining, and removal

SUBTOTAL SECTIONS 1 through 7 \$ 4,998,900

## SECTION 8: MINOR ITEMS

### 8A - Americans with Disabilities Act Items

ADA Items 2.0% \$ 99,978

### 8B - Bike Path Items

Bike Path Items 0.0% \$ -

### 8C - Other Minor Items

Other Minor Items 8.0% \$ 399,912

Total of Section 1-7 \$ 4,998,900 x 10.0% = \$ 499,890

**TOTAL MINOR ITEMS \$ 499,900**

## SECTIONS 9: ROADWAY MOBILIZATION

Item code							
999990	Total Section 1-8	\$ 5,498,800	x	10%	=	\$ 549,880	
							<b>TOTAL ROADWAY MOBILIZATION \$ 549,900</b>

## SECTION 10: SUPPLEMENTAL WORK

Item code	<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>			
066670	Payment Adjustments For Price Index	LS	0	x 0.00 = \$ -			
	Fluctuations						
066094	Value Analysis	LS	0	x 0.00 = \$ -			
				<i>Cost of NPDES Supplemental Work specified in Section 5D = \$ 30,000</i>			
Total Section 1-8		\$ 5,498,800		5% = \$ 275,000			
							<b>TOTAL SUPPLEMENTAL WORK \$ 305,000</b>

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 418000320

## SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code	<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>
Total Section 1-8	\$	5,498,800	1.5%	= \$ 82,500
<b>TOTAL STATE FURNISHED</b>				<b>\$82,500</b>

## SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization      \$5,498,800 (used to calculate TRO)  
 Total Construction Cost (excluding TRO and Contingency)      \$6,436,200 (used to check if project is greater than \$5 million excluding contingency)

Estimated Time-Related Overhead (TRO) Percentage (0% to 10%) = 5%

Item code	<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>
090100 Time-Related Overhead	WD	375	X \$733	= \$275,000
<b>TOTAL TIME-RELATED OVERHEAD</b>				<b>\$275,000</b>

## SECTION 13: ROADWAY CONTINGENCY

Total Section 1-12	\$	6,711,200	x <span style="border: 1px solid black; padding: 2px;">25%</span>	= \$1,677,800
<b>TOTAL CONTINGENCY*</b>				<b>\$1,677,800</b>

**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT**

EA: 1Q710 PID: 418000320

**II. STRUCTURE ITEMS**

100000

DATE OF ESTIMATE					
Name					
Bridge Number					
Structure Type					
Width (Feet) [out to out]					
Total Length (Feet)					
Total Area (Square Feet)					
Structure Depth (Feet)					
Footing Type (pile or spread)					
Cost Per Square Foot					
<b>COST OF EACH</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>

DATE OF ESTIMATE					
Name					
Bridge Number					
Structure Type					
Width (Feet) [out to out]					
Total Length (Feet)					
Total Area (Square Feet)					
Structure Depth (Feet)					
Footing Type (pile or spread)					
Cost Per Square Foot					
<b>COST OF EACH</b>	<b>\$0</b>				

<b>TOTAL COST OF BRIDGES</b>	<b>\$0</b>
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<b>TOTAL COST OF BUILDINGS</b>	<b>\$0</b>
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<b>STRUCTURES MOBILIZATION</b>	10%	<b>\$0</b>
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<b>STRUCTURES CONTINGENCY*</b>	25%	<b>\$0</b>
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<b>TOTAL COST OF STRUCTURES</b>	<b>\$0</b>
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Estimate Prepared By: \_\_\_\_\_  
XXXXXXXXXXXXXXXXXXXXX ----- Division of Structures

\_\_\_\_\_  
Date

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 41800320

## III. RIGHT OF WAY

Fill in all of the available information from the Right of Way Data Sheet.

A)	A1) Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees		\$	0
	A2) SB-1210		\$	0
B)	Acquisition of Offsite Mitigation		\$	0
C)	C1) Utility Relocation (Local Agency Share)		\$	0
	C2) Potholing (Design Phase)		\$	0
D)	Railroad Acquisition		\$	0
E)	Clearance / Demolition		\$	0
F)	Relocation Assistance (RAP and/or Last Resort Housing Costs)		\$	0
G)	Title and Escrow		\$	0
H)	Environmental Review		\$	0
I)	Condemnation Settlements	<u>0%</u>	\$	0
J)	Design Appreciation Factor	<u>0%</u>	\$	0
K)	Utility Relocation (Construction Cost)		\$	0

L) **TOTAL RIGHT OF WAY ESTIMATE** **\$0**

M) **TOTAL R/W ESTIMATE: Escalated** **\$0**

N) **RIGHT OF WAY SUPPORT** **\$0**

Support Cost Estimate Prepared By \_\_\_\_\_ Project Coordinator<sup>1</sup> \_\_\_\_\_ Phone \_\_\_\_\_

Utility Estimate Prepared By \_\_\_\_\_ Utility Coordinator<sup>2</sup> \_\_\_\_\_ Phone \_\_\_\_\_

R/W Acquisition Estimate Prepared By \_\_\_\_\_ Right of Way Estimator<sup>3</sup> \_\_\_\_\_ Phone \_\_\_\_\_

Note: Items G & H applied to items A + B

<sup>1</sup> When estimate has Support Costs only

<sup>2</sup> When estimate has Utility Relocation

<sup>3</sup> When R/W Acquisition is required

**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT**

**PSR-PDS COST ESTIMATE**

©

EA: 1Q710  
PID: 418000320

EA: 1Q710 PID: 418000320  
*Alpine Road Corridor Improvement*

District-County-Route: 04-SM-280  
PM: 0.04

Type of Estimate : PSR-PDS Estimate  
Program Code : Project has not been programmed  
Project Limits : On Alpine Road Corridor from La Mesa Drive to Stowe Lane

Project Description:  
Scope :  
Alternative : Alternative #2

**SUMMARY OF PROJECT COST ESTIMATE**

	<u>Current 2024 Year Cost</u>	<u>Escalated Cost (2031)</u>
TOTAL ROADWAY COST	\$ 18,318,000	\$ 23,127,000
TOTAL STRUCTURES COST	\$ -	\$ -
SUBTOTAL CONSTRUCTION COST	\$ 18,318,000	\$ 23,127,000
TOTAL RIGHT OF WAY COST	\$ 658,000	\$ 737,000
<b>TOTAL CAPITAL OUTLAY COSTS</b>	<b>\$ 18,976,000</b>	<b>\$ 23,864,000</b>
PA/ED SUPPORT	\$ 2,278,000	\$ 2,440,000
PS&E SUPPORT	\$ 2,847,000	\$ 3,274,000
RIGHT OF WAY SUPPORT	\$ 72,000	\$ 86,000
CONSTRUCTION SUPPORT	\$ 2,748,000	\$ 3,469,000
<b>TOTAL SUPPORT COST</b>	<b>\$ 7,945,000</b>	<b>\$ 9,269,000</b>

<b>TOTAL PROJECT COST</b>	<b>\$ 26,950,000</b>	<b>\$ 33,150,000</b>
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Programmed Amount

Month / Year

Date of Estimate (Month/Year) \_\_\_\_\_ 8 / 2024

Estimated Construction Start (Month/Year) \_\_\_\_\_ 7 / 2029

Number of Working Days = 375

Estimated Mid-Point of Construction (Month/Year) \_\_\_\_\_ 4 / 2030

Estimated Construction End (Month/Year) \_\_\_\_\_ 1 / 2031

Number of Plant Establishment Days 0

**Estimated Project Schedule**

PID Approval	7/14/2025
PA/ED Approval	3/3/2027
PS&E	3/3/2029
RTL	5/3/2029
Begin Construction	7/3/2029

Reviewed by District O.E. or  
Cost Estimate Certifier

Office Engineer / Cost Estimate Certifier	xx/xx/xxxx	(xxx) xxx-xxxx
	Date	Phone

Approved by Project Manager

Project Manager	xx/xx/xxxx	(xxx) xxx-xxxx
	Date	Phone

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 418000320

## I. ROADWAY ITEMS SUMMARY

	Section	Cost
1	Earthwork	\$ 718,500
2	Pavement Structural Section	\$ 3,203,800
3	Drainage	\$ 784,500
4	Specialty Items	\$ 1,892,000
5	Environmental	\$ 2,689,200
6	Traffic Items	\$ 1,630,900
7	Detours	\$ -
8	Minor Items	\$ 1,091,900
9	Roadway Mobilization	\$ 1,201,100
10	Supplemental Work	\$ 661,000
11	State Furnished	\$ 180,200
12	Time-Related Overhead	\$ 600,600
13	Total Roadway Contingency	\$ 3,663,500
<b>TOTAL ROADWAY ITEMS</b>		<b>\$ 18,318,000</b>

Estimate Prepared By : Jake Schramm 2/21/2025 (650)-356-8205  
Name and Title Date Phone

Estimate Reviewed By : Prasanna Muthireddy 2/21/2025 (925) 398-4855  
Name and Title Date Phone

**By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.**

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 418000320

## SECTION 1: EARTHWORK

Item code		<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>
190101	Roadway Excavation	CY	2,020	x 300.00 = \$	606,000
198010	Imported Borrow (CY)	CY	100	x 225.00 = \$	22,500
170105	Clearing and Grubbing (ACRE)	ACRE	1	x 90,000.00 = \$	90,000
<b>TOTAL EARTHWORK SECTION ITEMS</b>					<b>\$ 718,500</b>

## SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>
260203	Class 2 Aggregate Base	CY	1,970	x 150.00 = \$	295,500
390132	Hot Mix Asphalt (Type A)	TON	9,630	x 120.00 = \$	1,155,600
731504	Minor Concrete (Curb and Gutter)	CY	510	x 1,000.00 = \$	510,000
731521	Minor Concrete (Sidewalk)	CY	140	x 1,100.00 = \$	154,000
731840	Remove Concrete (Curb and Gutter)	LF	10,720	x 15.00 = \$	160,800
731780	Remove Concrete Sidewalk (SQYD)	SQYD	560	x 90.00 = \$	50,400
721431	Concrete (Concrete Apron)	CY	60	x 1,500.00 = \$	90,000
731511	Minor Concrete (Island Paving)	CY	740	x 500.00 = \$	370,000
398300	Remove Base and Surfacing	CY	1,590	x 125.00 = \$	198,750
398200	Cold Plane Asphalt Concrete Pavement	SQYD	48,600	x 4.50 = \$	218,700
<b>TOTAL PAVEMENT STRUCTURAL SECTION ITEMS</b>					<b>\$ 3,203,800</b>

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 418000320

## SECTION 3: DRAINAGE

Item code	Unit	Quantity	Unit Price (\$)	Cost
XXXXXX Project Drainage	LS	1	x 784,460.00 = \$	784,460
<b>TOTAL DRAINAGE ITEMS</b>				<b>\$ 784,500</b>

## SECTION 4: SPECIALTY ITEMS

Item code	Unit	Quantity	Unit Price (\$)	Cost
070030 Lead Compliance Plan	LS	1	x 12,000.00 = \$	12,000
080060 Level 2 Critical Path Method Schedule	LS	1	x 20,000.00 = \$	20,000
XXXX Retaining Wall	SQ FT	2,400	x 400.00 = \$	960,000
XXXX Misc Bike/Ped Improvements	LS	1	x 900,000.00 = \$	900,000
<b>TOTAL SPECIALTY ITEMS</b>				<b>\$ 1,892,000</b>

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 418000320

## SECTION 5: ENVIRONMENTAL

---

### 5A - ENVIRONMENTAL MITIGATION

Item code	Unit	Quantity	Unit Price (\$)	Cost
XXXXXX Environmental Mitigation	LS	1	x 784,460.00 = \$	784,460
<i>Subtotal Environmental Mitigation</i>				<b>\$ 784,460</b>

### 5B - LANDSCAPE AND IRRIGATION

Item code	Unit	Quantity	Unit Price (\$)	Cost
20XXXX Landscaping	LS	1	x 1,067,070.00 = \$	1,067,070
<i>Subtotal Landscape and Irrigation</i>				<b>\$ 1,067,070</b>

### 5C - EROSION CONTROL

Item code	Unit	Quantity	Unit Price (\$)	Cost
XXXXXX Erosion Control	LS	1	x 117,669.00 = \$	117,669
<i>Subtotal Erosion Control</i>				<b>\$ 117,669</b>

### 5D - NPDES

Item code	Unit	Quantity	Unit Price (\$)	Cost
130300 Prepare SWPPP	LS	2	x 10,000.00 = \$	20,000
130100 Job Site Management	LS	2	x 50,000.00 = \$	100,000
XXXXXX Construction BMP's	LS	2	x 300,000.00 = \$	600,000
<i>Subtotal NPDES</i>				<b>\$ 720,000</b>

<b>TOTAL ENVIRONMENTAL</b>	<b>\$ 2,689,200</b>
----------------------------	---------------------

### Supplemental Work for NPDES

066595 Water Pollution Control Maintenance Sharing*	LS	2	x 10,000.00 = \$	20,000
066596 Additional Water Pollution Control**	LS	2	x 10,000.00 = \$	20,000
066597 Storm Water Sampling and Analysis***	LS	2	x 10,000.00 = \$	20,000
<i>Subtotal Supplemental Work for NDPS</i>				<b>\$ 60,000</b>

\*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

\*\*Applies to both SWPPPs and WPCP projects.

\*\*\* Applies only to project with SWPPPs.

**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT**

EA: 1Q710 PID: 418000320

**SECTION 6: TRAFFIC ITEMS**

---

**6A - Traffic Electrical**

Item code	Unit	Quantity	Unit Price (\$)	Cost
870400 Lighting System (Alpine Road and Interstate 280)	EA	4	x 100,000.00 = \$	400,000
				<u>Subtotal Traffic Electrical \$ 400,000</u>

**6B - Traffic Signing and Striping**

Item code	Unit	Quantity	Unit Price (\$)	Cost
5602XX Signing	LS	1	x 49,000.00 = \$	49,000
15XXXX Traffic Delineation (Pavement Marking & Striping)	LS	1	x 305,000.00 = \$	305,000
839752 Remove Guardrail	LF	190	x 20.00 = \$	3,800
832007 Midwest Guardrail System (Wood Post)	LF	190	x 95.00 = \$	18,050
839745 Concrete Barrier Transition	LF	40	x 600.00 = \$	24,000
832070 Vegetation Control (Minor Concrete)	SQYD	120	x 200.00 = \$	24,000
8201XX Object Markers and Delineators	LS	1	x 5,000.00 = \$	5,000
XXXXXX Alternative Crash Cushion System	LS	1	x 100,000.00 = \$	100,000
				<u>Subtotal Traffic Signing and Striping \$ 528,850</u>

**6C - Traffic Management Plan**

Item code	Unit	Quantity	Unit Price (\$)	Cost
12865X Traffic Management Plan - Public Information	LS	1	x 24,000.00 = \$	24,000
120090 Traffic Management Plan - Construction Area Signs	LS	1	x 10,000.00 = \$	10,000
12865X Traffic Management Plan - Incident Management	LS	1	x 405,000.00 = \$	405,000
12865X Traffic Management Plan - Construction Strategies/Stage Construction and Traffic Handling	LS	1	x 203,000.00 = \$	203,000
12865X Traffic Management Plan - Portable Changeable Message Sign	LS	1	x 60,000.00 = \$	60,000
				<u>Subtotal Traffic Management Plan \$ 702,000</u>

<b>TOTAL TRAFFIC ITEMS</b>	<b>\$ 1,630,900</b>
----------------------------	---------------------

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 418000320

## SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code		<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>
XXXXXX	Detours	LS	0	x 0 = \$	-
					<b>TOTAL DETOURS</b>
					<b>\$ -</b>

\* Includes constructing, maintaining, and removal

	<b>TOTAL DETOURS</b>	<b>\$ -</b>
		<b>SUBTOTAL SECTIONS 1 through 7</b>
		<b>\$ 10,918,900</b>

## SECTION 8: MINOR ITEMS

### 8A - Americans with Disabilities Act Items

ADA Items

2.0%      \$      218,378

### 8B - Bike Path Items

Bike Path Items

0.0%      \$      -

### 8C - Other Minor Items

Other Minor Items

8.0%      \$      873,512

Total of Section 1-7      \$ 10,918,900      x      10.0%      =      \$      1,091,890

	<b>TOTAL MINOR ITEMS</b>	<b>\$ 1,091,900</b>
--	--------------------------	---------------------

## SECTIONS 9: ROADWAY MOBILIZATION

<b>Item code</b>						
999990	Total Section 1-8	\$ 12,010,800	x	10%	= \$	1,201,080
					<b>TOTAL ROADWAY MOBILIZATION</b>	<b>\$ 1,201,100</b>

## SECTION 10: SUPPLEMENTAL WORK

Item code		<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>	
066670	Payment Adjustments For Price Index Fluctuations	LS	0	x 200,000.00 = \$	-	
066094	Value Analysis	LS	0	x 10,000.00 = \$	-	
<i>Cost of NPDES Supplemental Work specified in Section 5D</i>					<b>= \$ 60,000</b>	
Total Section 1-8		\$ 12,010,800		5%	= \$	601,000
					<b>TOTAL SUPPLEMENTAL WORK</b>	<b>\$ 661,000</b>

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 418000320

## SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code	<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>
Total Section 1-8	\$	12,010,800	1.5%	= \$ 180,200
<b>TOTAL STATE FURNISHED</b>				<b>\$180,200</b>

## SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization      \$12,010,800 (used to calculate TRO)  
 Total Construction Cost (excluding TRO and Contingency)      \$14,053,100 (used to check if project is greater than \$5 million excluding contingency)

Estimated Time-Related Overhead (TRO) Percentage (0% to 10%) = 5%

Item code	<i>Unit</i>	<i>Quantity</i>	<i>Unit Price (\$)</i>	<i>Cost</i>
090100 Time-Related Overhead	WD	375	x \$1,602	= \$600,600
<b>TOTAL TIME-RELATED OVERHEAD</b>				<b>\$600,600</b>

## SECTION 13: ROADWAY CONTINGENCY

Total Section 1-12	\$	14,653,700	x <span style="border: 1px solid black; padding: 2px;">25%</span>	= \$3,663,500
<b>TOTAL CONTINGENCY*</b>				<b>\$3,663,500</b>

**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT**

EA: 1Q710 PID: 418000320

**II. STRUCTURE ITEMS**

DATE OF ESTIMATE					
Name					
Bridge Number					
Structure Type					
Width (Feet) [out to out]					
Total Length (Feet)					
Total Area (Square Feet)					
Structure Depth (Feet)					
Footing Type (pile or spread)					
Cost Per Square Foot					
<b>COST OF EACH</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>

DATE OF ESTIMATE					
Name					
Bridge Number					
Structure Type					
Width (Feet) [out to out]					
Total Length (Feet)					
Total Area (Square Feet)					
Structure Depth (Feet)					
Footing Type (pile or spread)					
Cost Per Square Foot					
<b>COST OF EACH</b>	<b>\$0</b>				

<b>TOTAL COST OF BRIDGES</b>	<b>\$0</b>
------------------------------	------------

<b>TOTAL COST OF BUILDINGS</b>	<b>\$0</b>
--------------------------------	------------

<b>STRUCTURES MOBILIZATION</b>	10%	<b>\$0</b>
--------------------------------	-----	------------

<b>STRUCTURES CONTINGENCY*</b>	25%	<b>\$0</b>
--------------------------------	-----	------------

<b>TOTAL COST OF STRUCTURES</b>	<b>\$0</b>
---------------------------------	------------

Estimate Prepared By: \_\_\_\_\_  
 XXXXXXXXXXXXXXXXXXXX ----- Division of Structures

\_\_\_\_\_ Date

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT

EA: 1Q710 PID: 418000320

## III. RIGHT OF WAY

Fill in all of the available information from the Right of Way Data Sheet.

A)	A1) Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees		\$	517,000
	A2) SB-1210		\$	0
B)	Acquisition of Offsite Mitigation		\$	
C)	C1) Utility Relocation (Local Agency Share)		\$	130,000
	C2) Potholing (Design Phase)		\$	0
D)	Railroad Acquisition		\$	0
E)	Clearance / Demolition		\$	0
F)	Relocation Assistance (RAP and/or Last Resort Housing Costs)		\$	0
G)	Title and Escrow		\$	10,500
H)	Environmental Review		\$	0
I)	Condemnation Settlements	<u>0%</u>	\$	0
J)	Design Appreciation Factor	<u>0%</u>	\$	0
K)	Utility Relocation (Construction Cost)		\$	0

L) **TOTAL RIGHT OF WAY ESTIMATE** **\$657,500**

M) **TOTAL R/W ESTIMATE: Escalated** **\$736,500**

N) **RIGHT OF WAY SUPPORT** **\$72,000**

Support Cost Estimate Prepared By \_\_\_\_\_ Project Coordinator<sup>1</sup> \_\_\_\_\_ Phone \_\_\_\_\_

Utility Estimate Prepared By \_\_\_\_\_ Utility Coordinator<sup>2</sup> \_\_\_\_\_ Phone \_\_\_\_\_

R/W Acquisition Estimate Prepared By \_\_\_\_\_ Right of Way Estimator<sup>3</sup> \_\_\_\_\_ Phone \_\_\_\_\_

Note: Items G & H applied to items A + B

<sup>1</sup> When estimate has Support Costs only

<sup>2</sup> When estimate has Utility Relocation

<sup>3</sup> When R/W Acquisition is required

## **Attachment F**

# **Traffic Engineering Performance Assessment (TEPA)**

# Alpine Road Corridor Improvement Project

## Traffic Engineering Performance Assessment (TEPA) Report

February, 2025

*Updated July, 2025*

Prepared For



Prepared By

**Kimley»Horn**

10 S. Almaden Blvd, Suite 1250

San Jose, CA 95113

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## 1 INTRODUCTION

San Mateo County, in cooperation with the San Mateo County Transportation Authority (SMCTA) and Caltrans proposes the Alpine Road Corridor Improvement Project (project) located in San Mateo County at Alpine Road interchange on Interstate – 280 (I-280). The project proposes measures to improve multimodal access, mobility, circulation, and enhance safety along Alpine Road and at I-280 interchange. A Project location map is included as Attachment A.

The full project extends from West of La Mesa Drive on Alpine Road to East of Stowe Lane on Alpine Road. However, this PSR-PDS encompasses the portion of the project that is within Caltrans right of way, between the I-280 southbound and northbound ramp intersections. The project is anticipated to include the following elements within Caltrans right of way:

- Improve the existing intersection operations at I-280 ramps by replacing the existing side-street-stop control and all-way-stop control with either signals or roundabouts as the intersection control.
- Replace free right turns at I-280 ramps with controlled and slow turning movements.
- Improve existing bicycle and trail facilities where applicable to provide a continuous and low stress bicycle and pedestrian corridor.
- Provide high-visibility crosswalks at intersections.
- Install necessary signage and pavement markings to implement the above improvements.

The project corridor is constrained by right-of-way, steep cross slopes, Los Trancos Creek, and San Francisquito Creek which limit the feasibility of widening 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.

The purpose of the Project is to:

- Improve bicycle and pedestrian access, safety and connectivity to transit, housing, commercial centers, and other destinations within the project limits
- Improve intersection operations along Alpine Road within the project limits
- Improve access to Alpine Road from the side streets.

### 1.1 Report Purpose

This report will serve as a Traffic Engineering Performance Assessment (TEPA) required for the Project Study Report-Project Development Support (PSR-PDS). This TEPA was prepared using readily available information, applying qualitative level analysis and evaluation techniques to identify the potential benefits and deficiencies of the proposed

Project to establish a potential scope of work needed for traffic analysis during the Project Approval and Environmental Document (PA&ED) phase. Detailed traffic studies and analysis will be completed during the PA&ED phase to demonstrate how each alternative meets the Project's purpose and need when compared to No Build conditions.

## **1.2 Traffic Study Area**

The Project traffic operations analysis limits include the intersections between La Mesa Drive and Junipero Serra Boulevard along Alpine Road. **Figure 1** shows the Traffic study area and intersections. These are preliminary study limits which will be finalized in the PA&ED phase of the project. Although Alpine Road runs in the true north-south direction, I-280 is designated as a north-south corridor. To be consistent with the directional conventions of I-280, Alpine Road is described in this analysis as running east-west, while I-280 is referred to as a north-south corridor.

## **1.3 Data Sources and Reference Documents**

The following data sources and reference documents were used in the preparation of this TEPA:

- Alpine Road Corridor Study Project, Kimley-Horn, March 2017
- Statewide Integrated Traffic Records System (SWITRS)
- Traffic Accident Surveillance and Analysis System (TASAS)

Figure 1. Traffic Study Area and Intersections



## 2 EXISTING CONDITIONS

This section describes the current operating conditions of the traffic study area using readily available data.

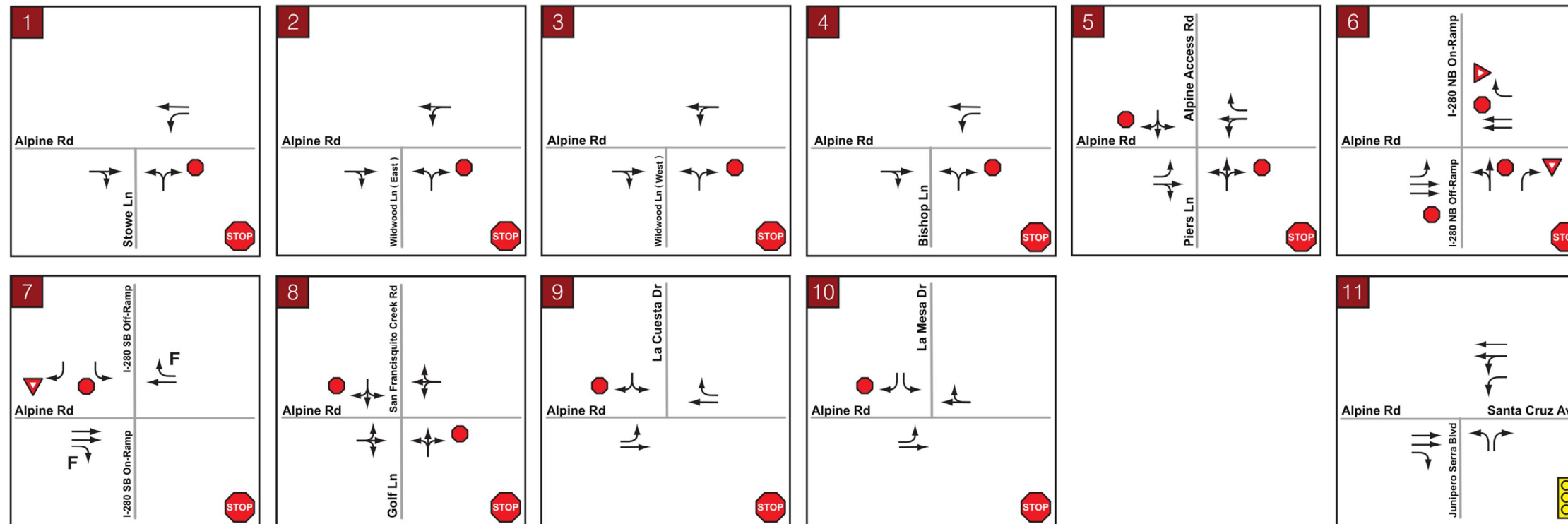
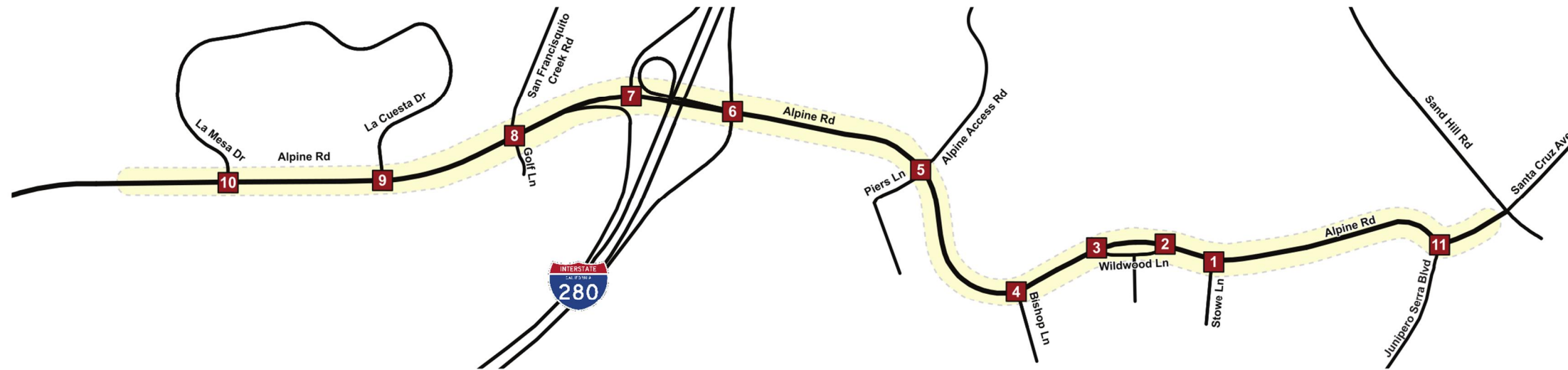
### 2.1 Ramp Metering

Currently, no ramp metering exists at the I-280 and Alpine Road interchange.

### 2.2 Intersection Lane Geometry and Traffic Volumes

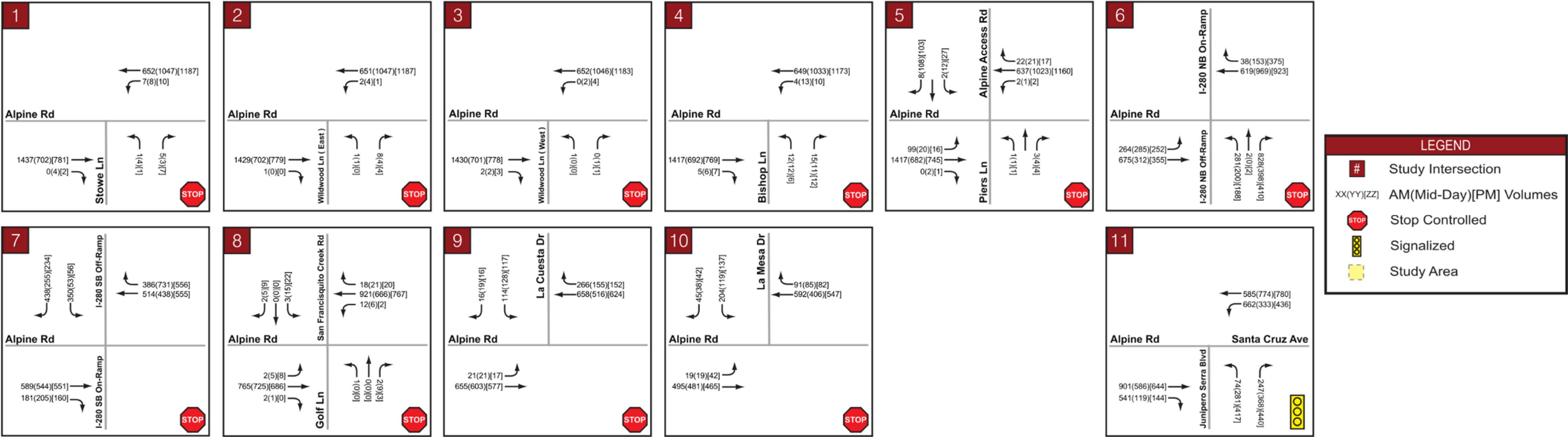
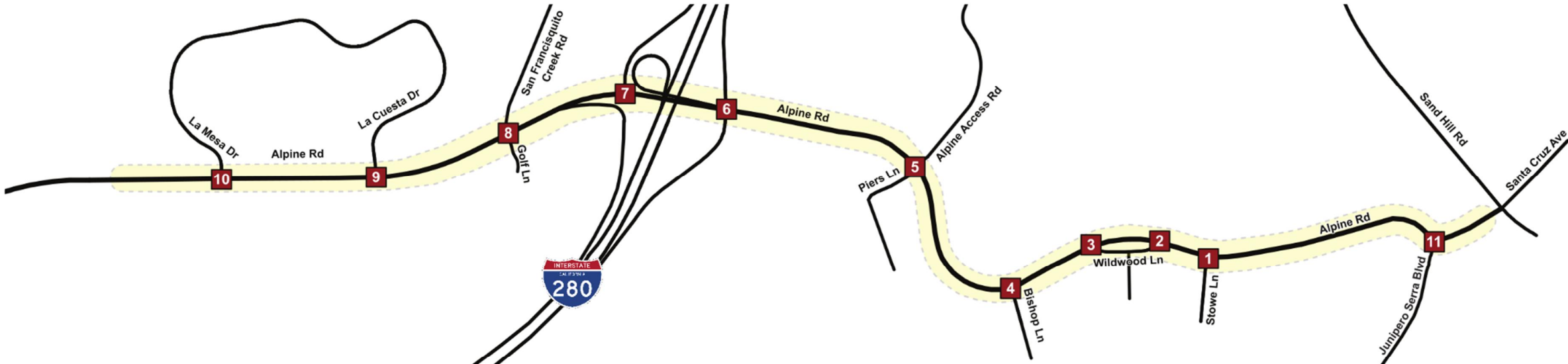
The intersection traffic control/lane geometry and turning movement volumes, extracted from the Alpine Road Corridor Study Project, are shown in **Figure 2** and **Figure 3**, respectively. The details will be reviewed during the PA&ED phase to match existing conditions where they have changed since 2017.

Figure 2. Existing (2015) Intersection Traffic Control/Lane Geometry



LEGEND	
#	Study Intersection
STOP	Stop Controlled
Yield Sign	Yield Sign
Signalized	Signalized
Study Area	Study Area
F	Free Right Turn

Figure 3. Existing (2015) Intersection Turning Movement Volumes



**LEGEND**

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

## 2.3 Level of Service Summary

The existing intersection operation analysis results, derived from VISSIM micro-simulation as part of the Alpine Road Corridor Study Project are summarized in **Table 1**. These results have not been reviewed by Caltrans. The performance of study intersections will be reanalyzed in close coordination with Caltrans as part of the PA&ED phase of the project.

**Table 1. Existing (2015) Intersection Performance Summary\*\***

No.	Intersection	Existing (2015) Conditions				
		Control	AM Peak*		PM Peak*	
			(7:30-8:30 AM)		(5-6 PM)	
			Delay (s)	LOS	Delay (s)	LOS
1	Stowe / Alpine	SSSC	5.4	A	21.5	C
2/3	Wildwood / Alpine	SSSC	31.0	D	>120	F
4	Bishop / Alpine	SSSC	16.2	C	23.3	C
5	Piers-Alpine Access / Alpine	SSSC	16.7	C	>120	F
6	NB I-280 Ramps / Alpine**	AWSC	15.6	C	38.7	E
7	SB I-280 Ramps / Alpine**	SSSC	12.5	B	4.6	A
9	Golf-San Francisquito / Alpine	SSSC	15.6	C	14.9	B
9	La Cuesta / Alpine	SSSC	15.0	C	14.3	B
10	La Mesa / Alpine	SSSC	14.0	B	10.8	B
11	Santa Cruz-Alpine / Junipero Serra	Signal	41.1	D	76.8	E

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) The worst results between intersections 2 and 3 are reported at Wildwood/Alpine intersection.

\* Currently, it is observed that higher delays are experienced by vehicles on the side streets, particularly within short time intervals during the peak hours, due to normal fluctuations in volume distribution. The table shows average delay, which was calculated based on hourly volumes. During the PA&ED phase, the current conditions at these intersections will be calibrated to reflect field-observed conditions.

\*\* These results have not been reviewed by Caltrans. Performance of study intersections will be reanalyzed as part of the PA&ED phase of the project.

Source: Alpine Road Corridor Study Project, Kimley-Horn, March 2017

As shown in **Table 1**, in the AM peak hour, all intersections operate at LOS D or better. In the PM peak hour, Wildwood Ln and Alpine Rd and Piers-Alpine Access Rd and Alpine Rd operate at an **LOS F** and Santa Cruz-Alpine Rd and Junipero Serra Blvd and I-280 NB Ramps and Alpine Rd operate at and **LOS E**. All other intersections operate at an LOS C or better in the PM peak hour.

## 2.4 Field Conditions

Field observations were performed on Tuesday, April 24, 2024, during the AM peak period (6 AM – 9 AM) and the PM peak period (4 PM – 7 PM).

### AM Peak Period

Congestion is primarily observed in the eastbound direction during the AM peak period (6 AM – 9 AM). The major eastbound bottleneck occurs at the signalized intersections of Junipero Serra Blvd and Alpine Rd, and Sand Hill Road and Alpine Rd. These intersections control both eastbound and westbound traffic along Alpine Rd through the I-280 interchange. Possibly due to limited spacing between intersections, uncoordinated signal control and insufficient green time, eastbound queueing along Alpine Rd from the Sand Hill Road and Junipero Serra Blvd intersections was observed to extend up to the NB I-280 ramps in the peak hour, occasionally causing queues to spill onto the NB I-280 off-ramp.

At the NB I-280 ramp intersection, eastbound left-turn queues along Alpine Road were also occasionally observed to spill past the left-turn pocket and into the through lanes. This was attributed to the stop control and high conflicting volumes from the westbound and northbound approaches at the intersection.

In the westbound direction, no major queues were observed along Alpine Road west of Junipero Serra Blvd. Minor delays and queuing were observed at the Junipero Serra Blvd intersection due to the traffic signal control.

At side street stop-controlled intersections, vehicles from side streets were observed to have difficulty finding gaps in the eastbound and westbound through traffic along Alpine Rd to make left turns onto Alpine Rd. Due to continuous flow, gaps were very limited, occurring occasionally when queues from Junipero Sierra Blvd extend beyond the intersection, causing through traffic along Alpine Rd to yield or keep the intersection clear, thereby allowing side street traffic to turn out. Long southbound queues of vehicles waiting to turn left from La Mesa Dr onto Alpine Rd were observed at the La Mesa Dr intersection.

Pedestrians and cyclists were observed using the Alpine Rd corridor. There is a bus stop on an unpaved shoulder north of Wildwood Ln (E) without markings for pedestrian crossing or other pedestrian facilities. At the NB and SB I-280 off- and on-ramps, vehicles making right turns at the channelized, uncontrolled right-turn movements, were observed crossing the bike lane and crosswalks before merging into the downstream traffic.

There is also a major off-road trail with access from the Piers Ln intersection. Vehicles are observed parking close to the intersection, and parking is full by the end of the AM peak period.

## **PM Peak Period**

In the PM peak period (4 PM – 7 PM) congestion is observed in both the eastbound and westbound directions. Similar to the AM peak period, the major eastbound bottleneck occurs at the signalized intersections at Junipero Serra Blvd and Alpine Rd, and Sand Hill Rd and Alpine Rd. Eastbound queueing along Alpine Rd from the Junipero Serra Blvd and Sand Hill Rd intersections was observed to occasionally extend to just past the Wildwood Ln (W) intersection. In addition, vehicles at the signal at the Junipero Serra Blvd and Alpine Rd intersection were observed to occasionally take more than once signal cycle to pass through the intersection.

Northbound queueing was also observed at the intersection of Junipero Serra Blvd and Alpine Rd. Eastbound queues spill from the Sand Hill Blvd and Alpine Rd intersection past Junipero Serra Blvd, resulting in northbound queueing at the Junipero Serra Blvd intersection. Northbound queueing was observed to occasionally extend beyond the right turn pocket and into the shoulder.

In the westbound direction, major queueing was observed in the first hour of the PM peak period, occasionally extending from the stop control at the NB I-280 ramp intersection to the Bishop Ln and Alpine Rd intersection. This queueing appears to begin around 3:00 PM, peaking between 4:00 - 5:00 PM due to high demand volumes.

At side street stop-controlled intersections, vehicles from side streets were observed to have difficulty finding gaps in the eastbound and westbound through traffic along Alpine Rd to make left turns onto Alpine Rd. Gaps were very limited, occurring occasionally when queues from Junipero Sierra Blvd extend beyond the intersection, causing through traffic along Alpine Rd to yield or keep the intersection clear, thereby allowing side street traffic to turn out. Long southbound queues were observed at the La Mesa Dr intersection.

Pedestrians and cyclists were observed using the Alpine Rd corridor in the PM peak period. Similar to the AM peak period, at the NB and SB I-280 off- and on-ramps, vehicles are observed making right turns at the channelized yield/free right-turns without yielding at the bike lanes and crosswalks.

## **2.5 Collision Data**

Collision data on I-280 between the I-280/Page Mill Road and I-280/Sand Hill Road interchanges were obtained from Caltrans' Traffic Accident Surveillance and Analysis System (TASAS) for a five-year period from January 1, 2019, to December 31, 2023, as recommended by Caltrans.

Accident rates for each segment and ramp were developed for the five-year period and compared to the average statewide accident rate. Average statewide accident rates along

I-280 were obtained from the TASAS reports. Mainline segment and ramp accident rates along I-280 were derived from the TASAS reports. The number of collisions (total collisions, fatal collisions, and fatal plus injury collisions), accident rates, and statewide average accident rates within the project area are summarized in **Table 2** and **Table 3** for northbound and southbound mainline segments and **Table 4** for ramps.

Along NB I-280, a total of 48 collision occurred from 2019 to 2023. Fifteen of the total collisions resulted in injuries, but the accident rates per million vehicle miles did not surpass the statewide averages for any of the segments. The most common type of collision was rear-end followed by hit object.

Along SB I-280, a total of 39 collisions occurred from 2019 to 2023. Twelve of the total collisions resulted in injuries and one collision resulted in a fatality. The accident rates per million vehicle miles did not surpass the statewide averages for any of the segments. The most common type of collision was hit object followed by rear-end.

At the I-280/Alpine Road interchange ramps, a total of 34 collisions occurred from 2019 to 2023. Twelve of the total collisions resulted in injuries. The total and fatal plus injury collision rates per million vehicle miles at the NB I-280 On- and Off-ramps to Alpine Road exceeded the statewide averages. The most common type of collision was rear-end followed by broadside. There were no collisions recorded at the SB I-280 Loop and Diagonal On-ramps from Alpine Road during the five-year period.

**Table 5** summarizes collision data collected from the Statewide Integrated Traffic Records System (SWITRS) for a five-year period from January 1, 2019, to December 31, 2023, along the Alpine Road corridor, consistent with the TASAS data.

A total of 33 collisions occurred between 2019 and 2023, with over half occurring at the Alpine Road and I-280 interchange. Three of the reported collisions resulted in a severe injury and one fatality was reported. Bicycles were involved in 6 collisions and no collisions involved pedestrians. The most common type of collision was broadside followed by rear-end.

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**Table 2. NB I-280 Mainline Collision Data (2019-2023)**

#	Segment	Number of Collisions			Collision Rate (per million vehicles)					
					Actual			Statewide Average		
		Total	Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury
1	NB I-280, South of OFF to Alpine Rd	19	0	6	0.45	0	0.14	0.67	0.006	0.22
	<u>Primary Factors</u>									
	Influence of Alcohol	2 (10.5%)								
	Improper Turn	3 (15.8%)								
	Speeding	5 (26.3%)								
	Other Violations	7 (36.8%)								
	Other Than Driver	2 (10.5%)								
	<u>Type of Collision</u>									
	Sideswipe	5 (26.3%)								
	Rear End	7 (36.8%)								
	Hit Object	7 (36.8%)								
2	NB I-280, Between OFF to Alpine Rd and ON from Alpine Rd	11	0	5	0.27	0	0.12	0.84	0.005	0.27
	<u>Primary Factors</u>									
	Influence of Alcohol	1 (9.1%)								
	Improper Turn	5 (45.5%)								
	Speeding	1 (9.1%)								
	Other Violations	2 (18.2%)								
	Other Than Driver	1 (9.1%)								
	Unknown	1 (9.1%)								
	<u>Type of Collision</u>									
	Sideswipe	1 (9.1%)								
	Rear End	4 (36.4%)								
Hit Object	5 (45.5%)									
Overturn	1 (9.1%)									
3	NB I-280, Between ON from Alpine to OFF to Sand Hill Rd	18	0	4	0.23	0	0.05	0.98	0.004	0.32
	<u>Primary Factors</u>									
	Improper Turn	5 (27.8%)								
	Speeding	9 (50.0%)								
	Other Violations	2 (11.1%)								
	Other Than Driver	2 (11.1%)								
	<u>Type of Collision</u>									
	Sideswipe	3 (16.7%)								
	Rear End	9 (50.0%)								
	Hit Object	3 (16.7%)								
	Overturn	1 (5.6%)								
Other	2 (11.1%)									

Source: Traffic Accident Surveillance and Analysis System (TASAS). **Bold** indicates accident rates greater than the statewide average rates.

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**Table 3. SB I-280 Mainline Collision Data (2019-2023)**

#	Segment	Number of Collisions			Collision Rate (per million vehicles)					
		Total	Fatal	Fatal + Injury	Actual			Statewide Average		
					Total	Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury
1	SB I-280, Between ON from Sand Hill Rd to OFF to Alpine Rd	25	1	11	0.28	0.011	0.12	0.99	0.004	0.32
	<u>Primary Factors</u>									
	Influence of Alcohol	2 (8.0%)								
	Improper Turn	11 (44.0%)								
	Speeding	7 (28.0%)								
	Other Violations	3 (12.0%)								
	Other Than Driver	2 (8.0%)								
	<u>Type of Collision</u>									
	Sideswipe	3 (12.0%)								
	Rear End	4 (16.0%)								
	Broadside	1 (4.0%)								
	Hit Object	14 (56.0%)								
	Overturn	1 (4.0%)								
	Auto-Pedestrian	1 (4.0%)								
	Other	1 (4.0%)								
2	SB I-280, Between OFF to Alpine Rd to Loop ON from Alpine Rd	5	0	1	0.13	0	0.03	0.97	0.004	0.31
	<u>Primary Factors</u>									
	Influence of Alcohol	1 (20.0%)								
	Speeding	1 (20.0%)								
	Other Than Driver	3 (60.0%)								
	<u>Type of Collision</u>									
	Sideswipe	1 (20.0%)								
	Rear End	1 (20.0%)								
	Hit Object	3 (60.0%)								
3	SB I-280, Between Loop and Diagonal ONs from Alpine Rd	3	0	0	0.07	0	0	0.73	0.006	0.24
	<u>Primary Factors</u>									
	Improper Turn	2 (66.7%)								
	Speeding	1 (33.3%)								
	<u>Type of Collision</u>									
	Rear End	1 (33.3%)								
	Broadside	1 (33.3%)								
	Hit Object	1 (33.3%)								
4	SB I-280, South of Diagonal ON from Alpine Rd	6	0	1	0.14	0	0.02	0.67	0.006	0.22
	<u>Primary Factors</u>									
	Improper Turn	1 (16.7%)								
	Speeding	2 (33.3%)								
	Other Violations	1 (16.7%)								
	Other Than Driver	2 (33.3%)								
	<u>Type of Collision</u>									
	Sideswipe	1 (16.7%)								
	Rear End	2 (33.3%)								
	Hit Object	3 (50.0%)								

Source: Traffic Accident Surveillance and Analysis System (TASAS). **Bold** indicates accident rates greater than the statewide average rates.

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**Table 4. I-280 Ramp Collision Data (2019-2023)**

#	Segment	Number of Collisions			Collision Rate (per million vehicles)					
		Total	Fatal	Fatal + Injury	Actual			Statewide Average		
					Total	Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury
1	NB I-280 OFF to Alpine Rd	22	0	10	<b>1.4</b>	0	<b>0.64</b>	1.31	0.009	0.48
	<u>Primary Factors</u>									
	Failure to Yield	2 (9.1%)								
	Improper Turn	1 (4.5%)								
	Speeding	14 (63.6%)								
	Other Violations	2 (9.1%)								
	Other Than Driver	3 (13.6%)								
	<u>Type of Collision</u>									
	Rear End	15 (68.2%)								
	Broadside	2 (9.1%)								
	Hit Object	3 (13.6%)								
	Other	2 (9.1%)								
2	NB I-280 ON from Alpine Rd	8	0	2	<b>1.02</b>	0	<b>0.25</b>	0.63	0.002	0.23
	<u>Primary Factors</u>									
	Influence of Alcohol	1 (12.5%)								
	Failure to Yield	6 (75.0%)								
	Unknown	1 (12.5%)								
	<u>Type of Collision</u>									
	Head-on	1 (12.5%)								
	Broadside	6 (75.0%)								
	Hit Object	1 (12.5%)								
3	SB I-280 OFF to Alpine Rd	4	0	0	0.55	0	0	1.04	0.003	0.38
	<u>Primary Factors</u>									
	Failure to Yield	1 (25.0%)								
	Speeding	3 (75.0%)								
	<u>Type of Collision</u>									
	Rear End	3 (75.0%)								
	Broadside	1 (25.0%)								
4	SB I-280 Loop ON from Alpine Rd	<i>No Collisions Reported</i>								
	<u>Primary Factors</u>									
	N/A									
	<u>Type of Collision</u>	<i>No Collisions Reported</i>								
	N/A									
5	SB I-280 Diagonal ON from Alpine Rd	<i>No Collisions Reported</i>								
	<u>Primary Factors</u>									
	N/A									
	<u>Type of Collision</u>	<i>No Collisions Reported</i>								
	N/A									

Source: Traffic Accident Surveillance and Analysis System (TASAS). **Bold** indicates accident rates greater than the statewide average rates.

**Table 5. Corridor Collision Data Summary**

Location	Number of Collisions (2019-2023)								Severe Injuries**	Fatalities**	Bicycle**	Pedestrian**
	Head-On	Sideswipe	Rear End	Broadside	Hit Object	Overtaken	Other	Total				
Sand Hill Rd to Junipero Serra Blvd	0	1	1	0	0	0	0	2	0	0	1	0
Alpine Rd/Junipero Serra Blvd	0	0	0	1	0	0	0	1	0	0	0	0
Junipero Serra Blvd to Stowe Ln	0	2	0	0	1	0	0	3	0	0	1	0
Alpine Rd/Stowe Ln	0	0	0	0	0	0	0	0	0	0	0	0
Stowe Ln to Wildwood Ln	0	0	0	0	0	0	0	0	0	0	0	0
Alpine Rd/Wildwood Ln	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0
Bishop to Piers Ln	1	0	0	0	0	0	0	1	2	0	0	0
Alpine Rd/Piers Ln/Alpine Access Rd	0	0	0	0	0	0	0	0	0	0	0	0
Piers Ln to NB I-280	0	0	1	0	0	0	0	1	0	0	0	0
Alpine Rd/NB I-280	0	2	3	4	2	0	0	11	1	0	1	0
NB I-280 to SB I-280	0	0	0	3	0	0	0	3	0	0	1	0
Alpine Rd/SB I-280	0	0	1	0	2	0	0	3	0	1	0	0
SB I-280 to San Francisquito Creek Rd	0	0	1	0	0	0	0	1	0	0	0	0
Alpine Rd/San Francisquito Creek Rd/Golf Ln	0	0	0	1	0	0	0	1	0	0	0	0
San Francisquito Creek Rd to La Cuesta Dr	0	0	0	0	1	0	0	1	0	0	0	0
Alpine Rd/La Cuesta Dr	0	0	1	0	0	1	0	2	0	0	0	0
La Cuesta Dr to La Mesa Dr	0	0	0	0	0	1	0	1	0	0	1	0
Alpine Rd/La Mesa Drive	0	0	0	2	0	0	0	2	0	0	1	0
La Mesa Dr to 1000' s/o La Mesa Dr	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>5</b>	<b>8</b>	<b>11</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>33</b>	<b>3</b>	<b>1</b>	<b>6</b>	<b>0</b>

Source: Statewide Integrated Traffic Records System (SWITRS), 2019-2023

\*It should be noted that a single collision can result in zero, one or multiple injuries. As a result, the number of collisions may be equal to, lower than, or higher than the number of injuries.

\*\*Severe Injuries and Fatalities refers to the number of affected individuals, while Bicycle and Pedestrian refer to the number of collisions

### 3 PROJECT DESCRIPTION AND ALTERNATIVES

Two build alternatives and a no build alternative are being evaluated to determine their ability to satisfy the project's purpose and need.

#### 3.1 No Build Alternative

Under the No Build Alternative, the existing Alpine Road corridor would remain unchanged, except for existing planned and programmed improvements to I-280 and approved development in unincorporated San Mateo County. Under the No Build Alternative, existing traffic conditions along the Alpine Road corridor would worsen as volumes increase due to nearby employment and housing growth. Poor yielding behavior by drivers would be expected to continue, creating challenges for bicyclists and pedestrians. The No Build Alternative represents the baseline alternative and offers a basis for the analysis and evaluation of the two Build Alternatives. The No Build Alternative does not meet the Purpose and Need.

#### 3.2 Build Alternative 1

Build Alternative 1 would eliminate free right turns at the I-280 off ramp approaches to Alpine Road, by installing traffic signals at the freeway on/off ramps. This alternative would also improve the existing bicycle facilities at the interchange by decreasing the number of conflict points, providing slow turning movements for vehicles and by decreasing the crossing length.

##### Outside Caltrans Right of Way

Build Alternative 1 would install single-lane traffic signals with controlled pedestrian and bicycle crossing at the Alpine Road/La Mesa Drive and Alpine Road/La Cuesta Drive intersections. The existing Class II bike lanes between these intersections would be upgraded, adding buffers and/or vertical separation where feasible.

Build Alternative 1 would also improve side street access to the Alpine Road corridor and include roadway improvements that promote traffic calming within the corridor. Existing parking at Piers Lane and access from Wildwood Lane would be evaluated for improvements that aid in increased visibility for vehicles entering or exiting Alpine Road. The existing bus stop across from Wildwood Lane would also be improved and a new pedestrian crossing to the bus stop would be evaluated.

An illustration of Build Alternative 1 can be found in **Figure 4**. More detailed figures are shown in **Attachment B**.

#### 3.3 Build Alternative 2

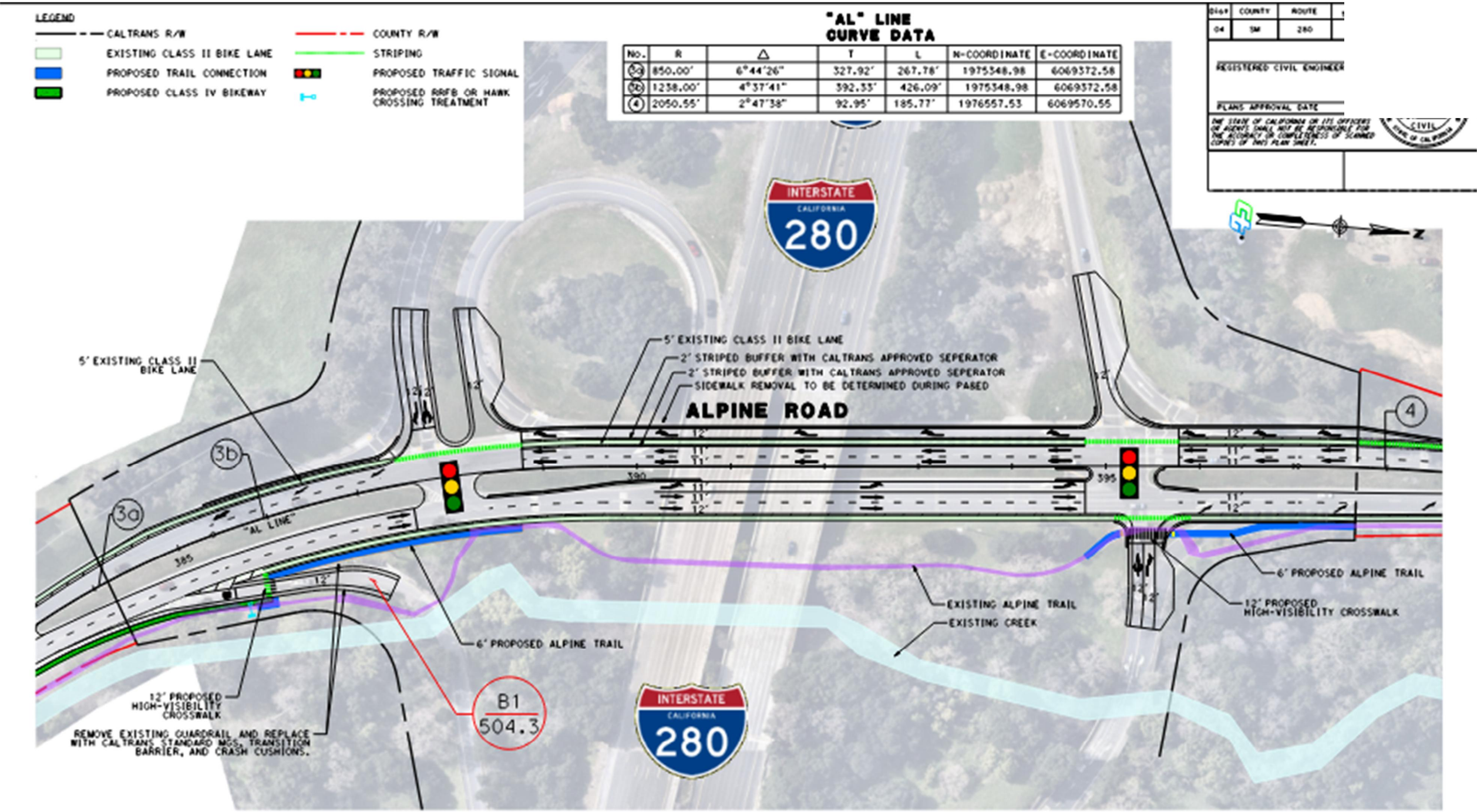
Build Alternative 2 would include the same improvements as Build Alternative 1 but would install roundabouts rather than traffic signals at the I-280 on/off ramps.

### **Outside Caltrans Right of Way**

Build Alternative 2 would install roundabouts at the Alpine Road/La Mesa Drive and Alpine Road/La Cuesta Drive intersections.

An illustration of Build Alternative 2 can be found in **Figure 5**. More detailed figures are shown in **Attachment C**.

Figure 4. Build Alternative 1 Concept





## 4 2050 NO BUILD CONDITIONS

The design year for the proposed Project is Year 2050. However, since this TEPA is prepared from readily available data, Year 2040 information from the Alpine Road Corridor Study Project is used in this section and is provided in **Figure 6**. 2050 volumes will be developed during the PA&ED phase.

The Year 2040 No Build traffic operational level of service (LOS) was analyzed using VISSIM micro-simulation as part of the Alpine Road Corridor Study Project. LOS results are summarized in **Table 6**. These results have not been reviewed by Caltrans. The performance of study intersections will be analyzed for the project design year 2050 in close coordination with Caltrans during the PA&ED phase of the project.

**Table 6. Year 2040 Intersection Performance Summary**

No.	Intersection	Long-Term (2040) No Improvements				
		Control	AM Peak*		PM Peak*	
			(7:30-8:30 AM)		(5-6 PM)	
			Delay (s)	LOS	Delay (s)	LOS
1	Stowe / Alpine	SSSC	9.9	A	22.2	C
2/3	Wildwood / Alpine	SSSC	>120	F	>120	F
4	Bishop / Alpine	SSSC	>120	F	23.9	C
5	Piers-Alpine Access / Alpine	SSSC	42.4	E	>120	F
6	NB I-280 Ramps / Alpine**	AWSC	29	D	38.1	E
7	SB I-280 Ramps / Alpine**	SSSC	51.2	F	5	A
8	Golf-San Francisquito / Alpine	SSSC	30.2	D	17.6	C
9	La Cuesta / Alpine	SSSC	19.2	C	16.8	C
10	La Mesa / Alpine	SSSC	14.8	B	11	B
11	Santa Cruz-Alpine / Junipero Serra	Signal	60.2	E	81.4	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) The worst results between intersections 2 and 3 are reported for Wildwood/Alpine intersection.

\* It should be noted that higher delays have been observed for vehicles on the side streets during a recent site visit, particularly within short time intervals during the peak hour due to normal fluctuations in volume distribution. The table shows average delay, which was calculated based on hourly volumes. During PA&ED phase, current conditions at these intersections will be calibrated to reflect field-observed conditions, and higher delays could result under future conditions.

\*\* These results have not been reviewed by Caltrans. Study intersections will be re-analyzed as part of the PA&ED phase of the project.

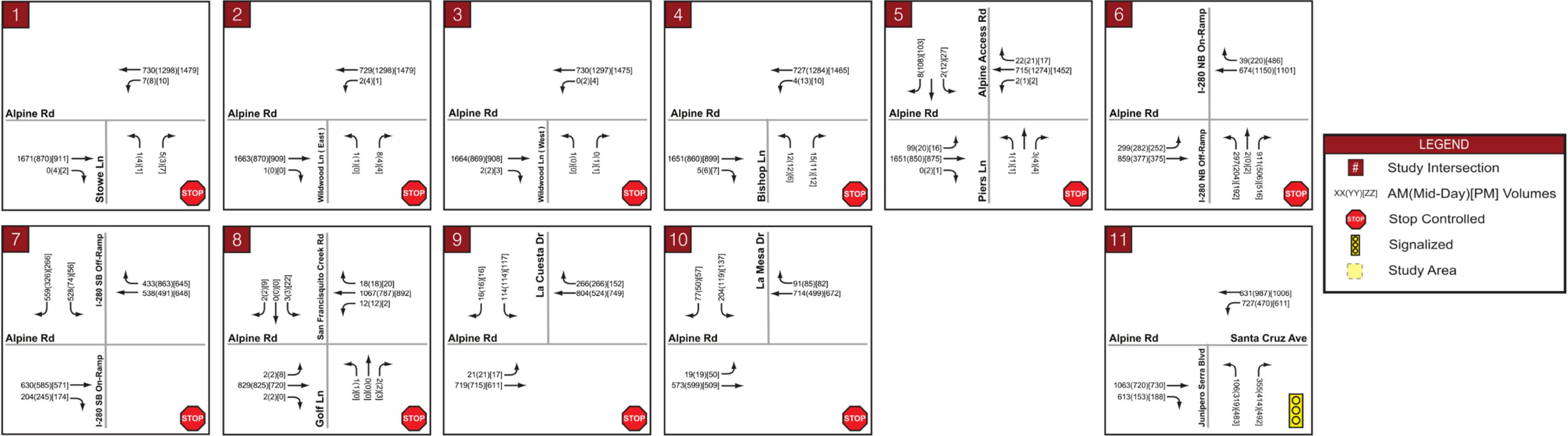
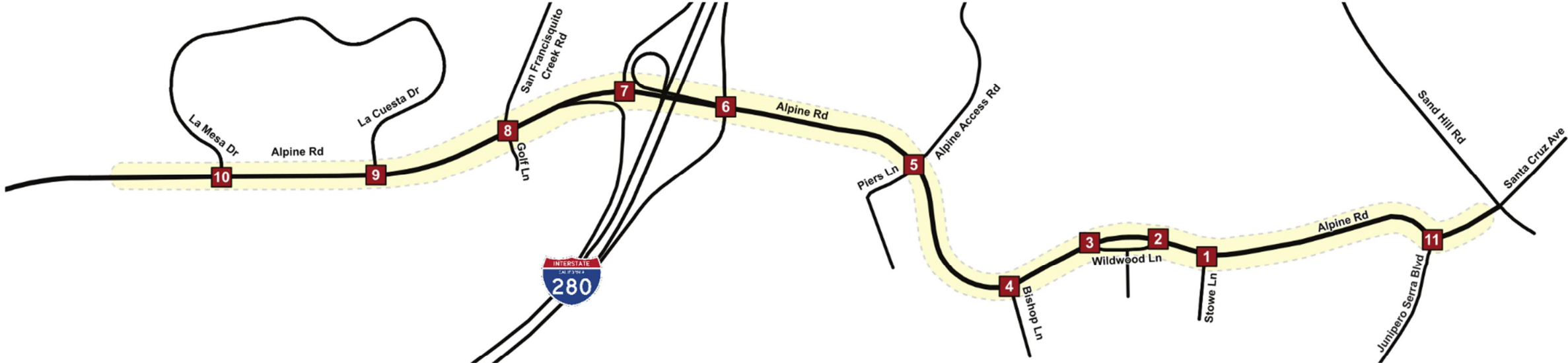
Source: Alpine Road Corridor Study Project, Kimley-Horn, March 2017

As shown in **Table 6**, in the AM peak hour, the intersections of Wildwood Ln and Alpine Rd, Bishop Ln and Alpine Rd, and SB I-280 Ramps and Alpine Rd are projected to operate at **LOS F** and Santa Cruz-Alpine Rd and Junipero Serra Blvd and Piers-Alpine Access Rd and Alpine Rd are projected to operate at **LOS E**. All other intersections are expected to operate at LOS D or better.

In the PM peak hour, Sana Cruz-Alpine Rd and Junipero Serra Blvd, Wildwood Ln and Alpine Rd, and Piers-Alpine Access Rd and Alpine Rd are projected to operate at **LOS F**

and NB I-280 Ramps and Alpine Rd is projected to operate at **LOS E**. All other intersections are expected to operate at LOS C or better.

Figure 6. Projected Year 2040 Unconstrained Demand Volumes



## 5 INTERSECTION SAFETY AND OPERATIONAL ASSESSMENT PROCESS (ISOAP)/INTERSECTION CONTROL EVALUATION (ICE)

In September 2024, Caltrans implemented a new Intersection Safety and Operational Assessment Process (ISOAP), which is an update and renaming of the Intersection Control Evaluation (ICE) and supersedes Traffic Operations Policy Directive 13-02. ISOAP places a greater emphasis on road safety performance, consistent with the strategic direction of the Department.

In this ISOAP, we have included readily available information; more detailed analysis that includes the safety will be performed during the PA&ED phase of the project. The project opening and design years for the proposed Project are 2030 and 2050. However, since this TEPA is prepared from readily available data, Year 2040 intersection control alternative analysis from the Alpine Road Corridor Study Project is used in this section. These results have not been reviewed by Caltrans. The performance of study intersections will be evaluated for the project opening year 2030 and the design year 2050 in close coordination with Caltrans during the PA&ED phase of the project

**Table 7** and **Table 8** show the signal and roundabout control alternatives analysis results for the I-280 ramp termini intersections.

**Table 7. I-280 Ramp Termini Intersections Control Analysis – Signal\***

Study Intersection	Signal Alternative				
	Control	AM Peak		PM Peak	
		Delay (s)	LOS	Delay (s)	LOS
I-280 NB Ramps / Alpine	Signal	40.3	D	16.0	B
I-280 SB Ramps / Alpine	Signal	35.3	D	17.0	B

Notes:

(a) Signal = Signalized

(b) Delay represents average intersection delay for signalized intersections.

\* Note that these results have not been reviewed by Caltrans. Study intersections will need to be re-analyzed as part of the PA&ED phase of the project.

Source: Alpine Road Corridor Study Project, Kimley-Horn, March 2017

**Table 8. I-280 Ramp Termini Intersections Control Analysis – RAB\***

Study Intersection	RAB Alternative				
	Control	AM Peak		PM Peak	
		Delay (s)	LOS	Delay (s)	LOS
I-280 NB Ramps / Alpine	RAB	26.2	D	6.0	A
I-280 SB Ramps / Alpine	RAB	29.8	D	2.3	A

Notes:

(a) RAB = Roundabout

(b) Delay represents worst approach movement for roundabouts.

\* Note that these results have not been reviewed by Caltrans. Study intersections will need to be re-analyzed as part of the PA&ED phase of the project.

*Source: Alpine Road Corridor Study Project, Kimley-Horn, March 2017*

As shown in **Table 7**, with signal control, both I-280 ramp termini intersections operate at an acceptable LOS D in the AM peak hour and LOS B in the PM peak hour.

As shown in **Table 8**, with roundabouts, both I-280 ramp termini intersections operate at an acceptable LOS D in the AM peak hour and LOS A in the PM peak hour.

Based on the analysis, both signal control and roundabouts are viable alternatives for the I-280 ramp termini intersections. In the PA&ED phase, Year 2050 volumes will be developed, and a more detailed analysis will be performed in accordance with the ISOAP guidelines.

## **6 RECOMMENDED SCOPE FOR PA&ED**

The purpose of the TEPA process is to develop an initial traffic scope of work for a more detailed traffic analysis to be completed during the PA&ED phase. The following are identified as the scope of future traffic engineering studies:

Project Study Limits: The Project study limits for traffic operations analysis will include the following mainline segments along I-280:

1. Northbound I-280 from Page Mill Road to Alpine Road
2. Northbound I-280 from Alpine Road to Sand Hill Road
3. Southbound I-280 from Sand Hill Road to Alpine Road
4. Southbound I-280 from Alpine Road to Page Mill Road

The following key intersections along Alpine Road will also be included:

1. Alpine Road and Stowe Lane (SSSC)
2. Alpine Road and Wildwood Lane (East) (SSSC)
3. Alpine Road and Wildwood Lane (West) (SSSC)
4. Alpine Road and Bishop Lane (SSSC)
5. Alpine Road and Alpine Access Road/Piers Lane (SSSC)
6. Alpine Road and northbound I-280 ramps (AWSC)
7. Alpine Road and southbound I-280 ramps (SSSC)
8. Alpine Road and San Francisquito Creek Road/Golf Lane (SSSC)
9. Alpine Road and La Cuesta Drive (SSSC)
10. Alpine Road and La Mesa Drive (SSSC)
11. Alpine Road and Junipero Serra Boulevard (Signal)

Note: SSSC – Side Street Stop Control, AWSC – All-Way Stop Control

The Study Limits will be assessed again and finalized during the PA&ED phase. The intersection of Santa Cruz Avenue/Sand Hill Road/Alpine Rd may be added as a study

intersection, as this intersection could affect the performance of the Junipero Serra Boulevard and Alpine Road intersection.

Traffic Data Collection: Peak hour turning movement counts for both the morning peak period (6 AM – 9 AM) and the evening peak period (4 PM – 7 PM) at the study intersections were collected on Tuesday, April 16, 2024, aiming to capture the current (post-Covid) traffic conditions.

At the two ramp termini intersections (#6 and #7), intersection turning movement counts were collected for an additional hour in both the morning (9 AM – 10 AM) and the evening (3 PM – 4 PM) for a total of 4 hours in each of the morning and evening peak periods. This will allow the ramp segment volumes to be extracted from the turning movement counts, fulfilling the mainline analysis requirement of the Project.

Counts collected in 2015 as part of the corridor feasible study are outdated and no longer accurately represent the existing traffic conditions. Based on the bottleneck locations and queue lengths, demand volumes will be determined for analysis.

Similarly, mainline segment volumes for I-280 were collected in both the northbound and southbound directions within the Alpine Road interchange on the same day as the intersection turning movement counts were collected. In addition to mainline volume data, average travel speed data for the I-280 mainline will be extracted from INRIX for the same periods to determine the congestion patterns and any operational deficiencies along the I-280 corridor within the Project study limits. Truck traffic and vehicle classification data for I-280 will be obtained from the Caltrans website.

To understand daily traffic demand and travel patterns along Alpine Road within the Project area, additional 7-day, 24-hour traffic counts were collected in two roadway segments from Monday, April 15, 2024, to Sunday, April 21, 2024. The segment locations are:

1. Alpine Road, east of I-280
2. Alpine Road, west of I-280

Pedestrian and bicyclist volumes, along with heavy vehicle volumes, were captured as part of the intersection turning movement counts during the selected peak periods. However, to accurately determine pedestrian and bicycle travel patterns and demand, additional counts were collected during off-peak hours and weekends at the SB I-280 ramp terminus intersection (#7). Pedestrian and bicyclist data was collected for 5 hours on the same day as the intersection turning movement counts, from 10 AM to 3 PM, and on Saturday, April 20, 2024, a continuous 12-hour count from 6 AM to 6 PM. These data will help inform the design for active transportation users through the interchange.

Field Observations: Field observations were made on Tuesday, April 24, 2024, during the AM and PM peak periods to observe the queues and operating conditions on a typical weekday. This included travel time runs (floating car runs) along Alpine Road to capture the queues and bottlenecks along the corridor. This information will be used in PA&ED phase of the project.

Traffic Forecasting: Future demands on I-280 mainline, ramps, and local streets in the Project study limits will be forecasted for future years. The Project anticipates using model outputs from the C/CAG-VTA Travel Demand Model as a basis for creating future year transportation networks for the Project.

To confirm that the model reflects the current plans for the area, an initial step is a review of the land use and network assumptions in the C/CAG-VTA Travel Demand Model for the area surrounding the Project. The land use assumptions will be reviewed for consistency with the Cities' recent General Plans as well as new projects that are being planned near the interchange area. The review will determine if there is a need to modify the assumptions for either the construction year or design year prior to generating future travel demand forecasts for the No Build and Build alternatives.

The model outputs will be compared to the existing traffic demand volumes in the study area. Validation and verification of the model will focus on the peak hour and peak period traffic demand volumes. The results of the model validation and verification will be documented in the Existing Conditions and Calibration Report. This report will be submitted to Caltrans for their review and approval.

Ramp Metering: There are no existing ramp meters at the NB and SB I-280 on-ramps.

Traffic Collision Analysis: A detailed 5-year collision analysis will be included in the traffic study. In addition to analyzing historical collision data, the project team will perform an HSM analysis, if needed. This analysis may be either qualitative or quantitative, depending on discussions with the Caltrans Safety team.

Intersection Capacity and Operational Analysis: Traffic analysis will evaluate impacts to the Study intersections using the VISSIM simulation model. The operational analysis will be completed for existing conditions and future conditions for each alternative, with and without the Project as well as any proposed project construction phasing. For Roundabout analysis, peak hours will be initially analyzed using SIDRA software, followed by VISSIM to evaluate the performance of all intersections and the corridor as an integrated network. The traffic analysis will also identify any potential bottlenecks within the study area. Intersection operations will be presented for each movement, as well as overall average for the entire intersection in terms of level of service (LOS), vehicle delay, volumes (demand/served), and average and maximum queue lengths. Corridor travel times will

also be presented. Additionally, the future No Build and Build conditions will be compared in terms of overall network performance metrics such as vehicle miles travelled (VMT), vehicle hours travelled (VHT), vehicle hours of delay (VHD), vehicle throughput, person throughput, delay per vehicle, speed, and travel time savings.

Freeway and Ramp Operational Analysis: The project does not plan to add capacity to I-280 mainline and ramp segments. The project team will consult with Caltrans Environmental and Highway Operations teams before conducting any mainline operations analysis. If a mainline operations analysis is performed, freeway operations will be evaluated using the Highway Capacity Software (HCS) facilities analysis tool or Freq. The operational analysis will be completed for existing conditions and future for each alternative, with and without the project as well as any proposed project construction phasing. The traffic analysis will also identify any potential bottlenecks within the study area. Freeway facility operations will be presented in terms of level of service (LOS), density, density, speed, bottleneck locations, queue length, and travel times. Additionally, the future No Build and Build conditions will be compared in terms of overall network performance metrics such as vehicle miles travelled (VMT), vehicle hours travelled (VHT), vehicle hours of delay (VHD), vehicle throughput, person throughput, delay per vehicle, speed, and travel time savings.

Intersection Safety and Operational Assessment Process (ISOAP): New ISOAP analysis will be performed at the northbound and southbound I-280 ramp termini intersections for the following intersection control types:

1. Side Street Stop Control
2. All-Way Stop Control
3. Signal
4. Roundabout

ISOAP focuses on intersection geometry and traffic control shall be determined through a performance-based analysis that considers all users and supports the principles of the Safe Systems approach, a greater emphasis on road safety. The findings of the ISOAP analysis will be documented in a Final ISOAP Memorandum, which will be used to help identify design alternatives for the I-280 ramp termini intersections.

Traffic Operations Analysis Report (TOAR): The findings of the PA&ED traffic analysis will be documented in a Final TOAR, which will be used to help identify design alternatives and support the Project purpose and need.

## **Attachment G**

# **Transportation Planning Scoping Information Sheet (TPSIS)**

## Transportation Planning Scoping Information Sheet

### Proposed Project Summary

<b>EA #</b>	1Q710	<b>AM Tool ID #</b>	XXXXX	<b>EFIS Project ID #</b>	0418000320
<b>County-Route-PM</b>	04 – SM – 280 – PM R0.044/R0.085				
<b>Anchor Asset</b>	Pavement				
<b>Proposed Project Scope</b>	<p>San Mateo County, in cooperation with the San Mateo County Transportation Authority (SMCTA) and Caltrans proposes the Alpine Road Corridor Improvement Project (project) located in San Mateo County at Alpine Road interchange on Interstate – 280 (I-280). The project proposes measures to improve multimodal access, mobility, circulation, and enhance safety along Alpine Road at the I-280 interchange.</p> <p>The full project extends from south of La Mesa Drive on Alpine Road to North of Stowe Lane on Alpine Road. This PSR-PDS encompasses the portion of the project that is within Caltrans right of way, between the I-280 southbound and northbound ramp intersections. The project is anticipated to include the following elements within Caltrans right of way:</p> <ul style="list-style-type: none"> <li>• Improve the existing intersection operations at I-280 ramps by replacing the existing side-street-stop control and all-way-stop control with either signals or roundabouts as the intersection control.</li> <li>• Replace large radius free right turns at I-280 ramps with smaller radius curb returns to allow for controlled and slow turning movements.</li> <li>• Improve existing bicycle and trail facilities where applicable to provide a continuous and low stress bicycle and pedestrian corridor.</li> <li>• Provide high-visibility crosswalks at intersections.</li> <li>• Install necessary signage and pavement markings to implement the above improvements</li> </ul>				
<b>Proposed Fund Type</b>	Local Funds for PID				



**Section 1: TPSIS Summary Statements & Recommended Actions**

<b>1-1 Project Summary</b> Refer to TPSIS Section: <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input checked="" type="checkbox"/> 5 <input checked="" type="checkbox"/> 6 <input type="checkbox"/> 7 <input checked="" type="checkbox"/> 8 <input type="checkbox"/> 9 <input checked="" type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> Other	Provide a justification if needs/opportunities are not recommended to be included in project scope.
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**Project Needs/Opportunities:**

<ul style="list-style-type: none"> <li>• Project needs and opportunities within the project scope include bike and pedestrian improvements, ADA compliance, and traffic operations within the project limits.</li> <li>• PID approval scheduled for summer of 2025. PAED approval is anticipated in March of 2027. PSE approval is scheduled for March 2029, and construction is set to begin in July 2029.</li> <li>• The costs for the two alternatives range from 25 million to 35 million for capital outlay support, construction, and right-of-way.</li> <li>• Opportunities include collaborating with the County of San Mateo, SMCTA, City of Menlo Park, Portola Valley, and SamTrans. Collaboration with the public, stakeholders, and community-based organizations will also be needed.</li> </ul>	
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**Project Risks/Challenges:**

<ul style="list-style-type: none"> <li>• Scope, Schedule, and cost risks are related to stakeholder consensus and approval.</li> <li>• Regulatory agency approvals present risks during the phases of the project.</li> <li>• Funding availability, environmental impacts, and ability to achieve improvement in traffic operations.</li> </ul>	
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**1-2 List recommendations based on identified needs/opportunities to be included in project scope.**

All of the needs addressed in the sections outlined in the Project Needs/Opportunities section above will be included in the project scope.

**Required Sections Checklist** (Check boxes below once completed):

Section 1  Section 2  Section 3  Section 4  Section 5  Section 6-1

Approved for use in Project Nomination by: <div style="text-align: center;"><i>Erik Alm</i>      4/18/2025</div>	Received for use in Project Nomination by: <div style="text-align: center;"><i>Ming Hew</i>      4/21/2025</div>
<b>District Planning Representative      (Date)</b>	<b>District Asset Manager      (Date)</b>

**Section 2: Tribal Government Consultation, Local Partners, and Public Engagement Coordination**

2-1 TRIBAL GOVERNMENT CONSULTATION – <a href="#">Caltrans Tribal Relations Team</a> ; <a href="#">NALB Resource Intranet Page</a>		
<p><b>2-1-1 Tribal Lands – Is the proposed project:</b>                      within or near an Indian Reservation Rancheria, or Tribal Trust Land? <a href="#">NALB Tribal lands Viewer</a>; <a href="#">DEA GIS Library</a>  <input type="checkbox"/> Yes    <input checked="" type="checkbox"/> No</p>	<p><i>If so, indicate if:</i></p> <p><input type="checkbox"/> The project involves trust land(s) (including tribal and individual allotted lands) outside of a reservation or Rancheria</p> <p><input type="checkbox"/> Tribe(s) have been informed of the project and will be coordinated with during project development</p> <p><input type="checkbox"/> All applicable tribal laws and regulations have been reviewed for required coordination</p>	<p><b>Provide names of TRIBES, TRIBAL GOVERNMENTS, reservations, Rancherias, tribal trust lands.</b></p> <p>The proposed project is not within or near an Indian Reservation Rancheria or Tribal Trust Land and does not involve trust lands outside of a reservation or Rancheria.</p>
<p><b>2-1-2 Does the Tribe have a Tribal Employment Rights Office/Ordinance (TERO) on file?</b>  <input type="checkbox"/> Yes    <input checked="" type="checkbox"/> No</p>	<p><i>If so, indicate if:</i></p> <p><input type="checkbox"/> The TERO has been reviewed for required coordination</p> <p><input type="checkbox"/> Is this project on a route identified in the National Tribal Transportation Facility Inventory (NTTFI)?</p> <p><input type="checkbox"/> There is a related Memorandum of Understanding (MOU) between the District and the Tribe</p> <p><input type="checkbox"/> Caltrans has other MOUs with the Tribe;</p>	
<p><b>2-1-3 Have any tribes expressed environmental concerns related to the project?</b>  <input type="checkbox"/> Yes    <input checked="" type="checkbox"/> No</p>	<p><i>Provide Tribal name(s) and details:</i></p>	
<p><b>2-1-4 Have any tribes expressed any other concerns related to the project?</b>  <input type="checkbox"/> Yes    <input checked="" type="checkbox"/> No</p>	<p><i>Provide Tribal name(s) and details:</i></p>	
<p><b>2-1-5 Who are the appropriate points of contact within the Tribe(s) for future coordination and consultation?</b></p>	<p><i>Name, title, phone number, e-mail:</i>                      N/A</p>	

Transportation Planning Scoping Information Sheet

2-2 EQUITY CONSIDERATIONS		
2-2-1 Is the project located in or have the potential to affect equity priority communities (also known as disadvantaged or underserved communities)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown (Defer to PID)	<p><b>Describe the communities and any potential impacts.</b></p> <p>The tract has healthier community conditions than between 92.5% to 98.8% of other California Tracts.</p> <p>The area has a CalEnviroScreen 4.0 percentile that ranges from 3 to 19, less than the threshold of 39.34.</p>
2-2-2 If 2-2-1 is Yes, what are their known mobility needs?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown (Defer to PID)	<p><b>Describe needs.</b></p>
2-2-3 Do opportunities exist to incorporate project components that reconnect divided communities, improve equitable access and mobility, or contribute to better public health?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown (Defer to PID)	<p><b>Describe opportunities.</b></p> <ul style="list-style-type: none"> <li>Improved bicycle and pedestrian infrastructure along the corridor will connect the communities along the corridor with a safer facility.</li> <li>Signalized or roundabouts at key intersections will alleviate traffic congestion for the communities in the area and allow for easier access points.</li> </ul>
2-3 PRELIMINARY PUBLIC ENGAGEMENT		
	Source/Date Contacted	Additional Information
2-3-1 Which local partner agencies have been identified?	March 2024 March 2024 April 2024 May 2024 May 2024 May 2024	County of San Mateo San Mateo County Transportation Authority Caltrans City of Menlo Park Town of Portola Valley SamTrans
2-3-2 Which other stakeholders, community-based organizations, advocates, or interest groups have been identified?	May 2024 May 2024 May 2024 May 2024	Silicon Valley Bicycle Coalition San Mateo County Fire Department Local Schools, Communities, HOAs, and Businesses Stanford University

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<b>2-3-3 What is the recommended Public Engagement Strategy for this project?</b>	<input type="checkbox"/> Inform <input type="checkbox"/> Consult	<input checked="" type="checkbox"/> Collaborate <input type="checkbox"/> Involve	<input type="checkbox"/> No Recommendation
<b>2-3-4 Is the project likely to require translation and interpretation services?</b> <a href="https://www.fhwa.dot.gov/civilrights/programs/title_vi/lep_fourfactor.cfm">https://www.fhwa.dot.gov/civilrights/programs/title_vi/lep_fourfactor.cfm</a> <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown (Defer to PID)	<p><b>Describe.</b>                  From the large census tracts that surround the project area for 6130 and 6132, Census data obtained from Census.gov indicates that of the approximately 9,926 population, approximately (2,213) 22.2% "Speak English less than very well." This is above the threshold of 1000 of eligible population as laid out by the FHWA LEP four factor program.</p> <p>The language that would be required is: Spanish (420) 4.2%.</p> <p>For this project, translation of vital documents will be required for Spanish.</p>	

**Section 3: Plan and Document Review**

3-1 PLANNING DOCUMENTS AND SCOPING TOOLS	SUMMARY OF RECOMMENDATIONS & CONSIDERATIONS
<b>3-1-1 Active Transportation Plans:</b> <input checked="" type="checkbox"/> California Active Transportation Plan (CAT Plan) <input checked="" type="checkbox"/> District Bike and Ped Plan <input checked="" type="checkbox"/> Regional/Local Plan	<ul style="list-style-type: none"> <li>• In the Caltrans District 4 Pedestrian Plan, Alpine Road and Interstate 280 is listed as a Tier 3 priority segment.</li> <li>• The San Mateo County City/Association of Governments does not identify the Alpine Road corridor for bike or pedestrian improvements.</li> <li>• The surrounding cities and communities do not have bicycle and pedestrian plans.</li> </ul>
<b>3-1-2 Broadband:</b> <input checked="" type="checkbox"/> Is there Caltrans-owned broadband infrastructure within this project location?	<ul style="list-style-type: none"> <li>• Caltrans has no existing fiber within the project limits. There appears to be no proposed fiber in this location along Alpine Road.</li> </ul>

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<p><b>3-1-3 Climate Change Planning:</b></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Caltrans District Vulnerability Assessment</li> <li><input checked="" type="checkbox"/> Caltrans Climate Change Adaptation Priority Plans</li> <li><input checked="" type="checkbox"/> Local Climate Action Plan/GHG reduction plan</li> <li><input type="checkbox"/> Greenhouse gas section of EIR for RTP/SCS</li> <li><input checked="" type="checkbox"/> Locally Adopted Transportation Adaptation Plan</li> </ul>	<ul style="list-style-type: none"> <li>• For the location at SM-280 (PM R0.044/R0.085), a 5.3% increase in 100-year precipitation depth is projected by 2085. Additionally, the average 7-day maximum temperature in this area is expected to rise by 8.1°F from the baseline by 2085—another key climate vulnerability. The figures below show the expected precipitation and temperature increases.</li> <li>• The segment of Interstate 280 near San Francisquito Creek has a cross-hazard prioritization score of 8.87, which is considered low priority.</li> <li>• San Mateo County adopted a Community Climate Action Plan in 2022, with targets to reduce greenhouse gas emissions by 45% by 2030 and achieve carbon neutrality by 2040.</li> <li>• The County also adopted a countywide transportation plan in 2017, with goals extending through 2040. Additionally, the Metropolitan Transportation Commission (MTC) has established greenhouse gas reduction goals in its regional transportation plan.</li> </ul>
<p><b>3-1-4 Cultural/Historic Preservation Scoping Tools:</b></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Caltrans Cultural Resources Database</li> <li><input checked="" type="checkbox"/> Caltrans Historic Bridge Inventory</li> <li><input checked="" type="checkbox"/> Archaeological Site Sensitivity Model</li> <li><input type="checkbox"/> AB52 Letter</li> </ul>	<p>No bridges in the project limits are listed in Caltrans Historic Bridge Inventory. No previously identified historic properties are present. There is a high potential to encounter unrecorded Native American resources within the project corridor. Consultation with Native American Tribes is recommended early in the process. We do not anticipate built historic resources would be present and/or require detailed evaluation.</p>
<p><b>3-1-5 Freight Planning:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> California Freight Mobility Plan</li> <li><input type="checkbox"/> California Sustainable Freight Action Plan</li> <li><input type="checkbox"/> Caltrans Safety Roadside Rest Areas (SRRA)</li> <li><input type="checkbox"/> Truck Parking Study</li> <li><input checked="" type="checkbox"/> Regional/Local Plan</li> </ul>	<ul style="list-style-type: none"> <li>• The project limits are not listed in the California Freight Mobility plan which was created in 2023.</li> <li>• The California Statewide Truck Parking Study <a href="#">California Statewide Truck Parking Study</a>, does not specifically call out I-280, but generally D4 is identified as a region with a lack of adequate truck parking.</li> <li>• The California Sustainable Freight Action Plan does not list any changes along the project limits.</li> <li>• There are no roadside rest areas along the project limits.</li> <li>• San Mateo County does not list this project corridor as a freight corridor in their Countywide transportation plan of 2040.</li> </ul>
<p><b>3-1-6 Project Planning:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> District 10 Year Project Book</li> <li><input type="checkbox"/> MONSTER List</li> <li><input checked="" type="checkbox"/> Preliminary Investigation/Feasibility Study</li> </ul>	<p>Project 1Q710 is not listed in the Caltrans 10-Year Project Book.</p> <p>One SHOPP Project is located directly at this interchange (I-280 / Alpine Road) - SHOPP ID 23717 on SM-280, Milepost R0.05, in Post-Planning stage. Advertised Year 2024/25, Project cost = \$1.295 M. Project description: Near Menlo Park, at Alpine Road Undercrossing No. 35-0009L/R. Plant establishment, creek monitoring and biological monitoring work for EA 4J850.</p> <p>Next closest projects on I-280 from 10-year Project Book:</p> <ul style="list-style-type: none"> <li>• SHOPP ID 23059 (Activity: Signs and Lighting, Guardrail) at SM-280 R6.673 to R26.877, Advertised Year 2029/30, in Planning Stage.</li> </ul>

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	<ul style="list-style-type: none"> <li>• SHOPP ID 22050 (Activity: Drainage, Replace/Rehabilitate Culvert) at SCL-280 MP 12.1 to 20.6, Advertised Year 2030/31, in Planning Stage.</li> </ul> <p>The project is not listed on the MONSTER list.</p> <p>An <a href="#">Alpine Road Corridor Study Project</a> by San Mateo County was prepared by consultant Kimley-Horn back in 2017, detailing the Corridor's congestion issues and lack of bicycle and pedestrian safety facilities. The improvements included in the scope of this project are included in the Corridor Study.</p>
<p><b>3-1-8 Rail and Mass Transportation Planning:</b></p> <p><input type="checkbox"/> California State Rail Plan</p> <p><input type="checkbox"/> Statewide Transit Strategic Plan</p>	<p>The project is not included in the California State Rail Plan.</p> <p>The project is not included in the Statewide Transit Strategic Plan.</p>
<p><b>3-1-9 Regional &amp; Local Planning:</b></p> <p><input checked="" type="checkbox"/> Regional Transportation Plan</p> <p><input type="checkbox"/> Sustainable Community Strategy</p> <p><input type="checkbox"/> General and Local Plans</p> <p><input type="checkbox"/> Regional Concept of Transportation Operations</p> <p><input type="checkbox"/> Local Coastal Program Plan</p>	<p>MTC PBA 2050 (10/2021 approved). The Regional Transportation Plan calls out the funding to implement interchange improvements at US-101 and El Camino Real and a new eastbound freeway lane between I-280 and El Camino Real. (21-T06-018)</p> <p>MTC PBA 2050 (10/2021 approved). The Regional Transportation Plan calls out the funding to implement new express bus service along US-101 and I-280 (on express lanes where available) from Foster City, San Mateo, and Burlingame to Downtown San Francisco; from San Mateo and Palo Alto to Western San Francisco; and from San Bruno to Sunnyvale. Improvements include park-and-ride facilities, ramp improvements and bus stop improvements (20-minute peak headways). (21-T12-119)</p>
<p><b>3-1-10 System Planning:</b></p> <p><input type="checkbox"/> Interregional Transportation Strategic Plan (ITSP)</p> <p><input checked="" type="checkbox"/> Corridor Plans (TCR, CSMP, CMCP)</p>	<p>This project is not located on an IRRS route listed in either the 2021 ITSP or the ITSP 2022 Addendum.</p> <p>This project is located on a corridor with a completed TCR, specifically the Interstate 280 Transportation Concept Report, dated July 2013. The TCR segment that the Project lies within has an existing and 25-Year Concept layout consisting of an 8- to 10-lane freeway. Goals and strategies for this segment of I-280 in San Mateo County include the following:</p> <ul style="list-style-type: none"> <li>• Installing Traffic Operations System (TOS) elements and ramp metering</li> <li>• Supporting operations and improvements/expansions of transit service and amenities</li> <li>• Bicycle strategies: incorporating bicycle facility design treatments (bike lanes or wider shoulders, ramp reconstruction to intersect at a 90-degree angle, bike lane striping to the left of right-turn-only lane, avoidance of dual right-turn lanes) into interchange reconfiguration/reconstruction</li> </ul>

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	<p>projects. Also to review and evaluate maintenance projects for the feasibility of incorporating striping and signage improvements to enhance bicycle access and safety at ramp intersections with local roads.</p> <ul style="list-style-type: none"> <li>• Pedestrian strategies:             <ul style="list-style-type: none"> <li>○ Removing barriers to pedestrian circulation by squaring up ramp intersections to slow turning vehicles and shorten crossing distances, and by striping crosswalks at on- and off-ramps along ramp termini to direct pedestrians and notify motorists of their presence as well as adding countdown signals.</li> <li>○ Review and evaluate future interchange configuration/reconstruction projects with regard to the need to provide and connect sidewalks around ramp intersections, based on pedestrian demand. Analyze lane width of facility to consider addition of medians to provide a pedestrian refuge and calm traffic.</li> <li>○ Work with local agencies on implementing planned and programmed pedestrian and bicycle network improvements. These may include on-street improvements or grade-separated facilities.</li> </ul> </li> </ul>
<p><b>3-1-11 Tribal Planning:</b>  <input checked="" type="checkbox"/> <b>Tribal Transportation Plan</b></p>	<p>The proposed project is not within or near an Indian Reservation Rancheria or Tribal Trust Land and does not involve trust lands outside of a reservation or Rancheria.</p>
<p><b>3-1-12 Other (Identify):</b>  <input type="checkbox"/> _____</p>	

## Section 4: Caltrans Stakeholder Information

4-1 TITLE	Name	Phone Number	Email Address
4-1-1 Complete Street/Bicycle and Pedestrian Coordinator	Greg Currey	(510) 821-0517	<a href="mailto:gregory.curry@dot.ca.gov">gregory.curry@dot.ca.gov</a>
4-1-2 Climate Change Coordinator/Liaison	Lucius Wu	(510) 529-5653	Lucius.Wu@dot.ca.gov
4-1-3 District Native American Coordinator and/or District Cultural Resources PQS Staff (Environmental/Cultural Resources) <i>PQS = Professionally Qualified Staff: Caltrans cultural resources staff who meet the Secretary of Interior's Professional Qualifications Standards for Historic Preservation disciplines</i>	Althea Asaro (DNAC)	(510) 847-2178	<a href="mailto:althea.asaro@dot.ca.gov">althea.asaro@dot.ca.gov</a>
4-1-4 District Native American Liaison (Transportation Planning)	Stephen Conteh	(510) 960-0887	<a href="mailto:Stephen.Conteh@dot.ca.gov">Stephen.Conteh@dot.ca.gov</a>
4-1-5 Environmental Planner	Zachary Gifford	(510) 506-1264	<a href="mailto:zachary.gifford@dot.ca.gov">zachary.gifford@dot.ca.gov</a>
4-1-6 Freight Planner	Kelsey Rodriguez	(510) 496-9395	Kelsey.rodriguez@dot.ca.gov
4-1-7 Local Development Review (LDR) Planner	Luana Chen	(916) 634-5424	<a href="mailto:Luana.Chen@dot.ca.gov">Luana.Chen@dot.ca.gov</a>
4-1-8 Park and Ride Coordinator	Claire Bye	(916) 694-8260	<a href="mailto:Claire.bye@dot.ca.gov">Claire.bye@dot.ca.gov</a>
4-1-9 Regional Planner	Stephen Conteh	(510) 960-0887	<a href="mailto:Stephen.Conteh@dot.ca.gov">Stephen.Conteh@dot.ca.gov</a>
4-1-10 Sustainable Planning Grant Coordinator	Becky Frank	(510) 960-0883	Becky.Frank@dot.ca.gov
4-1-11 System Planner	Jacob Buffenbarger	(510) 853-4919	<a href="mailto:Jacob.Buffenbarger@dot.ca.gov">Jacob.Buffenbarger@dot.ca.gov</a>
4-1-12 Rail & Transit Planner	Wingate Lew	510-960-0797	<a href="mailto:Wingate.lew@dot.ca.gov">Wingate.lew@dot.ca.gov</a>
4-1-13 Equity, Engagement and Health Planner	Laurel Sears	510-853-4329	Laurel.sears@dot.ca.gov

## Section 5: Climate Change

5-1 CLIMATE CHANGE CONSIDERATIONS	Comment/Action
5-1-1 Using the Caltrans climate change considerations tool kit, identify potential GHG emission and climate change-related mitigation options at the proposed project location.	<p>Completed Caltrans climate change considerations toolkit has been attached?</p> <p><input type="checkbox"/> Yes</p> <p><input checked="" type="checkbox"/> No</p> <p>Considering using as many GHG emission reduction and adaption measures as feasible. This project should incorporate adequate adaption strategies in cooperation with local jurisdiction and other stakeholder agencies.</p>

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<p><b>5-1-2</b> Using the District Vulnerability Assessment appropriate for the proposed project area, identify the potential climate stressors that could affect transportation assets within the project limits.</p>	<input checked="" type="checkbox"/> <b>Temperature</b> <input checked="" type="checkbox"/> <b>Precipitation</b> <input type="checkbox"/> Wildfire <input type="checkbox"/> <b>Other:</b> <input type="checkbox"/> <b>Sea-Level Rise</b> <input type="checkbox"/> <b>Storm Surge</b> <input type="checkbox"/> <b>Cliff Retreat</b>
<p><b>5-1-3</b> Are there potential climate risks to major assets within the project area?</p>	<input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b> It is indicated the project location, the average 7-day maximum temperature is projected to increase by 8.1°F and the 100-year precipitation depth is expected to increase by 6.3% by the year 2085.
<p><b>5-1-4</b> Is the project located in the Coastal Zone Boundary, Local Coastal Program Area (<a href="https://www.coastal.ca.gov/maps/">https://www.coastal.ca.gov/maps/</a>), or within the San Francisco Bay Conservation and Development Commission (BCDC)? <a href="https://bcdc.ca.gov/bcdc-cities-jurisdiction.html">https://bcdc.ca.gov/bcdc-cities-jurisdiction.html</a>.</p>	<input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b> <p><b>Describe.</b>                  The project is not located within the Coastal Zone Boundary or the Local Coastal Boundary.</p> <p>The Project is located in San Mateo County which is within the San Francisco Bay Conservation and Development Commission.</p>

**Section 6: Smart Mobility, Active Transportation and Transit**

<p><b>6-1 APPLICABILITY OF CHECKLIST (REQUIRED)</b></p>	
<p><b>6-1-1</b> Is the project located entirely on a facility where bicyclists and pedestrians are legally prohibited and the project does not involve a shared use path, pedestrian/bicycle structure or work impacting a local road crossing or interchange? If no, continue, if yes, you may stop here.</p>	<input type="checkbox"/> <b>Yes</b> <input checked="" type="checkbox"/> <b>No</b>
<p><b>6-1-2</b> Is the primary project purpose to address assets that are outside of the roadbed where pedestrian and bicycle travel is not affected, and construction will not affect future pedestrian and bicycle facilities? If no, continue, if yes, you may stop here.</p>	<input type="checkbox"/> <b>Yes</b> <input checked="" type="checkbox"/> <b>No</b>
<p><b>6-2 PLACE TYPES (OPTIONAL from here on)</b></p>	<p><b>Comment/Action</b></p>
<p><b>6-2-1</b> Identify the Smart Mobility Framework Place Type(s) surrounding the project limits.</p>	<input type="checkbox"/> <b>Central Cities</b> <input type="checkbox"/> <b>Urban Communities</b> <input checked="" type="checkbox"/> <b>Suburban Communities</b> <input type="checkbox"/> <b>Rural Areas</b> <input type="checkbox"/> <b>Protected Lands and Special Use Areas</b>
<p><b>6-2-2</b> Are there any -existing or proposed- Pedestrian/ Bicyclist/ Passenger Rail/Transit Trip Generators in or adjacent to the project area?</p>	<input checked="" type="checkbox"/> <b>Schools</b> <input type="checkbox"/> <b>Town Centers</b> <input type="checkbox"/> <b>Shopping Centers</b> <input type="checkbox"/> <b>Bus Stops</b> <input type="checkbox"/> <b>Large Employment Businesses</b> <input checked="" type="checkbox"/> <b>Shared-use trail access/parking.</b> <input checked="" type="checkbox"/> <b>Public Transit /Passenger Rail Facilities</b> <input type="checkbox"/> <b>Health/Medical Facilities</b> <input type="checkbox"/> <b>Other</b>

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<b>6-2-3 Check all that apply:</b> <input type="checkbox"/> the highway segment functions as a “Main Street” or a “Safe Route to School” <input checked="" type="checkbox"/> the project provides unique or primary access into or out of any of the trip generators or between communities. <input type="checkbox"/> the project provides unique or primary access across a river, highway corridor or other natural and/or man-made barrier	
<b>6-2-4 Summary of place type related considerations (see Smart Mobility Framework Guide)</b> N/A	
<b>6-3 BICYCLE, PEDESTRIAN, RAIL AND TRANSIT CONDITIONS</b>	<b>Comment/Action</b>
<b>6-3-1 Identify existing bicycle and pedestrian facilities within project limits.</b>	<input checked="" type="checkbox"/> Bicycle/Pedestrian Accessibility <input checked="" type="checkbox"/> Curb Ramps <input checked="" type="checkbox"/> Bicycle Lane Class II <input type="checkbox"/> California Coastal Trail <input checked="" type="checkbox"/> Backpacking/Hiking/Equestrian Trail <input checked="" type="checkbox"/> Signage <input type="checkbox"/> Shoulder <input checked="" type="checkbox"/> Green Striping <input checked="" type="checkbox"/> Sidewalks <input type="checkbox"/> Bike Boxes <input type="checkbox"/> Other: <input type="checkbox"/> Two-Stage Turn Boxes
<b>6-3-2 Identify physical and/or perceived impediments for bicyclists and pedestrians.</b>	<input type="checkbox"/> Narrow Shoulders <input type="checkbox"/> Utility Boxes <input type="checkbox"/> Narrow Sidewalks <input checked="" type="checkbox"/> High Vehicle Speeds <input checked="" type="checkbox"/> Connectivity Gaps <input type="checkbox"/> AADT <input checked="" type="checkbox"/> Curbs and Gutters <input type="checkbox"/> Other:
<b>6-3-3 Are there any complete streets assets including Bikeways (Class I – IV), Sidewalk, and Crosswalk, in Fair or Poor condition, in the project area?</b>	<input checked="" type="checkbox"/> Yes <b>Describe.</b> <input type="checkbox"/> No    There are class 2 bikeways in fair condition and sidewalk within the project. Some sidewalk is substandard and has gaps.
<b>6-3-4 Design Year ADT</b>	<input type="checkbox"/> <2,500 <input type="checkbox"/> 2,500-5,000 <input type="checkbox"/> 5,000-10,000 <input type="checkbox"/> >10,000
<b>6-3-5 Posted Speed</b>	<input type="checkbox"/> 15-20 <input type="checkbox"/> 25-30 <input checked="" type="checkbox"/> 35-40 <input type="checkbox"/> >45
<b>6-3-6 Level of Traffic Stress (LTS)</b>	<b>Bicycle LTS:</b> <b>Pedestrian LTS:</b>
<b>6-3-7 Identify existing Rail and transit facilities within the project vicinity/ corridor.</b>	<input checked="" type="checkbox"/> Rail and Transit Stops <input type="checkbox"/> Active Rail/Transit Line <input type="checkbox"/> Park and Ride Lot <input type="checkbox"/> Connections to other services <input type="checkbox"/> Signal Priority <input type="checkbox"/> Seamless Transfer Opportunities <input type="checkbox"/> Other:

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6-4 BICYCLE, PEDESTRIAN & TRANSIT NEEDS/OPPORTUNITIES	Comment/Action	
<b>6-4-1 Are there opportunities to improve safety for bicyclists and pedestrians with Complete Street features?</b>	<input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b>	Class II along the Alpine Road corridor. Class IV bike lanes at the Alpine Road interchange and sidewalk improvements along Alpine Road corridor.
<b>6-4-2 Identify any pedestrian, bicycle or transit needs in/linking to the project area as identified in an existing Bicycle/Pedestrian Plan or comprehensive planning study for the corridor.</b>	At the intersection of Alpine Rd & Junipero Serra Blvd it is recommended that the NB bike lane be moved to the shoulder, upgraded to Class IV, and given crossings in line with the pedestrian crosswalks to reduce time spent in a conflict zone. At the intersection of Alpine Rd & Sand Hill Rd it is recommended that vertical separation on either side of the NB and SB bike pockets be included with the SB bike pocket also receiving green conflict markings.	
<b>6-4-3 Is there a public/partner identified need for bicycle/pedestrian/ transit or “way finding” signs that could be incorporated into the project?</b>	<input type="checkbox"/> <b>Yes</b> <input checked="" type="checkbox"/> <b>No</b>	Click or tap here to enter text.
<b>6-4-4 Provide recommendations to address physical and/or perceived impediments for bicyclists and pedestrians (identified in 6-3-2) within project limits”.</b>	<input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>No</b>	<p>Class II along the Alpine Road corridor. Class IV bike lanes at the Alpine Road interchange and sidewalk improvements along Alpine Road corridor.</p> <p>At the intersection of Alpine Rd &amp; I-280 it is recommended that bike lanes be moved to the shoulder, upgraded to Class IV, and given crossings in line with the pedestrian crosswalks. Provide green conflict markings at all intersecting points of bicycle and motor vehicle traffic where they are not presently. Provide flashing pedestrian beacons at all crosswalks where motor vehicles must yield and upgrade all crosswalks to high-visibility. These recommendations are applicable to whichever intersection alternative is selected. Where speeds exceed 40 mph ensure minimum 6 ft width for class II bike lanes.</p>
<b>6-4-5 Is there any opportunity to improve transit on state owned roads or improve access to transit?</b>	<input type="checkbox"/> <b>Yes</b> <input checked="" type="checkbox"/> <b>No</b>	Click or tap here to enter text.
<b>6-4-6 Preferred Bikeway Facilities</b>	<input type="checkbox"/> <b>Class I</b> <input checked="" type="checkbox"/> <b>Class II</b> <input type="checkbox"/> <b>Class III</b> <input checked="" type="checkbox"/> <b>Class IV</b> <input type="checkbox"/> <b>Standard Shoulder or Shared Lane</b>	

**Section 7: Environmental Linkage Considerations (OPTIONAL) – SEE PEAR**

7-1 AIR QUALITY, WILDLIFE, AND NATURAL HABITAT CONSIDERATIONS	
<p><b>7-1-1 Check all that apply:</b></p> <p><input type="checkbox"/> Air Quality – proposed project is located in a Federal non-attainment or attainment maintenance area</p> <p><input type="checkbox"/> Project is within identified Wildlife Corridors in a Habitat Conservation Plan, South Coast Wildlife Linkage or California Essential Habitat Connectivity Plan.</p> <p><input type="checkbox"/> Proposed project is located within or near any lands protected under a National Scenic Rivers Act, US Fish and Wildlife Services such as Critical Habitat, National Wildlife Refuge System, etc., or within the boundaries of other resource agencies such as HCPs, USFS or BLM designated critical habitat areas or Habitat Conservation Plans</p>	
<p><b>7-1-2 Are any of the following Officially Designated Habitat Types located within or near the proposed Project Location?</b></p> <p><input type="checkbox"/> Wetlands                                      <input type="checkbox"/> Important Bird Areas</p> <p><input type="checkbox"/> Riparian or Stream Habitats              <input type="checkbox"/> Important Rare Plants Areas</p> <p><input type="checkbox"/> Jurisdictional Waters                        <input type="checkbox"/> Natural Communities of Conservation Concern</p> <p><input type="checkbox"/> Environmentally Sensitive Habitat Areas</p>	<p><i>If so, describe here:</i></p>
<p><b>7-1-3 Is there an identified fish passage barrier(s)?</b> <a href="http://www.cafishpac.org">www.cafishpac.org</a></p>	<p><input type="checkbox"/> Yes                      <i>Describe.</i></p> <p><input type="checkbox"/> No</p>
7-2 ADVANCE BIOLOGICAL MITIGATION OPPORTUNITIES	
<p><b>7-2-1 Identify Potential Environmental Mitigation Opportunities for the project:</b></p> <p><input type="checkbox"/> Mitigation bank within the project limits with available credits to purchase</p> <p><input type="checkbox"/> Mitigation Fees from existing Habitat Conservation Plan</p> <p><input type="checkbox"/> Projects timeline allows participation in the Advance Mitigation Program</p> <p><input type="checkbox"/> Any opportunities available within the project limits to offset project impacts</p>	<p><i>Describe.</i></p>

**Section 8: System Planning (OPTIONAL)**

<b>8-1 ROUTE DESIGNATIONS</b>			
<b>8-1-1 Freeway and Expressway</b>	Freeway	<b>8-1-8 Scenic Highway</b>	Yes
<b>8-1-2 National Highway System</b>	Yes	<b>8-1-9 National Highway Freight Network</b>	Non-PHFS Interstate
<b>8-1-3 Federal Functional Classification</b>	Interstate	<b>8-1-10 Critical Urban Freight Corridor</b>	No
<b>8-1-4 Strategic Highway Network</b>	Yes	<b>8-1-11 Critical Rural Freight Corridor</b>	No
<b>8-1-5 Strategic Interregional Corridor</b>	No	<b>8-1-12 NHS and STAA Route Classification</b>	National Network (STAA)
<b>8-1-6 Interregional Road System</b>	No	<b>8-1-13 Truck Network Designation</b>	See 8-1-12
<b>8-1-7 Priority Interregional Facility</b>	No	<b>8-1-14 Other</b>	No Special Restrictions
<b>8-2 FACILITY TYPE</b>			
<b>8-2-1 Current</b>	-8-10 F (8- to 10-lane freeway) per current I-280 TCR		
<b>8-2-2 Concept</b>	8-10 F (8- to 10-lane freeway) – 25-Year Concept per current I-280 TCR		
<b>8-2-3 Ultimate</b>	8-10 F (8- to 10-lane freeway) – 25-Year Concept per current I-280 TCR		

**Section 9: Local Development Review (OPTIONAL) -SEE PSR-PDS**

<b>9-1 LOCAL DEVELOPMENTS IMPACTING PROJECT</b>		
<b>Project Title:</b> County of San Mateo Routine Maintenance Program		<b>Encroachment Permit Required</b> <input checked="" type="checkbox"/>
<b>Project Location:</b> Countywide, including at Alpine Rd near I-280		
<b>GTS link:</b> <a href="https://ld-igr-gts.dot.ca.gov/district/4/report/13952#">https://ld-igr-gts.dot.ca.gov/district/4/report/13952#</a>		
<b>9-1-1 Project Description:</b> Routine maintenance program for San Mateo County for county facilities, including repair of damaged slope drainage paving at San Francisquito Creek/Alpine Rd 0.3 mi north of I-280.		
<b>9-1-2 Distance to Caltrans Project:</b> 0.3 mi north of I-280		
<b>9-1-3 Summary of Mitigation Measures:</b> N/A		
<b>9-1-4 Mitigation Funding Source(s)</b>	<b>9-1-5 Amount of Available Funding</b>	<b>9-1-6 Summary of Caltrans Concerns:</b> <ul style="list-style-type: none"> <li>Some project level activities may affect riparian flow patterns upstream of bridges, trestles, culverts or other structures for which Caltrans holds responsibility</li> <li>Sea level rise may impact transportation facilities located in the project area</li> <li>Encroachment permit required for some of the maintenance projects (<i>unclear if needed for this proposed project area</i>).</li> </ul>

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<b>9-2 LOCAL DEVELOPMENTS IMPACTING PROJECT</b>		
<b>Project Title:</b> <i>Searsville Watershed Restoration Project</i>		<b>Encroachment Permit Required</b> <input type="checkbox"/>
<b>Project Location:</b> within the San Francisquito Creek watershed including unincorporated areas of San Mateo and Santa Clara Counties		
<b>GTS link:</b> <a href="https://ld-igr-gts.dot.ca.gov/district/4/report/28949#">https://ld-igr-gts.dot.ca.gov/district/4/report/28949#</a>		
<b>9-2-1 Project Description:</b> Modification of Searsville Dam to reestablish sediment transport processes and fish passage conditions past Searsville Dam, including relocation of water diversion downstream to the San Francisquito Creek Pump Station and expanding the pump's capacity.		
<b>9-2-2 Distance to Caltrans Project:</b> between 0.3 and 1 mi north of I-280		
<b>9-2-3 Summary of Mitigation Measures:</b> N/A		
<b>9-2-4 Mitigation Funding Source(s)</b>	<b>9-2-5 Amount of Available Funding</b>	<b>9-2-6 Summary of Caltrans Concerns:</b>
		<ul style="list-style-type: none"> <li>Sediment removal may impact U.S 101 bridge crossing over San Francisquito Creek, which is a high priority Caltrans asset vulnerable to sea level rise</li> </ul>

**Section 10: Broadband Considerations (OPTIONAL)**

<b>10-1 BROADBAND OPPORTUNITIES (<a href="#">CPUC Map</a>, <a href="#">BMMN Map</a>, <a href="#">Caltrans-owned Broadband Map</a>)</b>	
<b>10-1-1 Is there existing broadband infrastructure (fiberoptic cable) available for Caltrans use within the project location?</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown (Defer to PID)
<b>10-1-2 If 'Yes', who owns the broadband infrastructure?</b>	<input type="checkbox"/> Caltrans <input type="checkbox"/> BMMN <input checked="" type="checkbox"/> ISP <input type="checkbox"/> Other
<b>10-1-3 If 'No', is there an opportunity for Caltrans to install broadband infrastructure as part of this project?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown (Defer to PID)

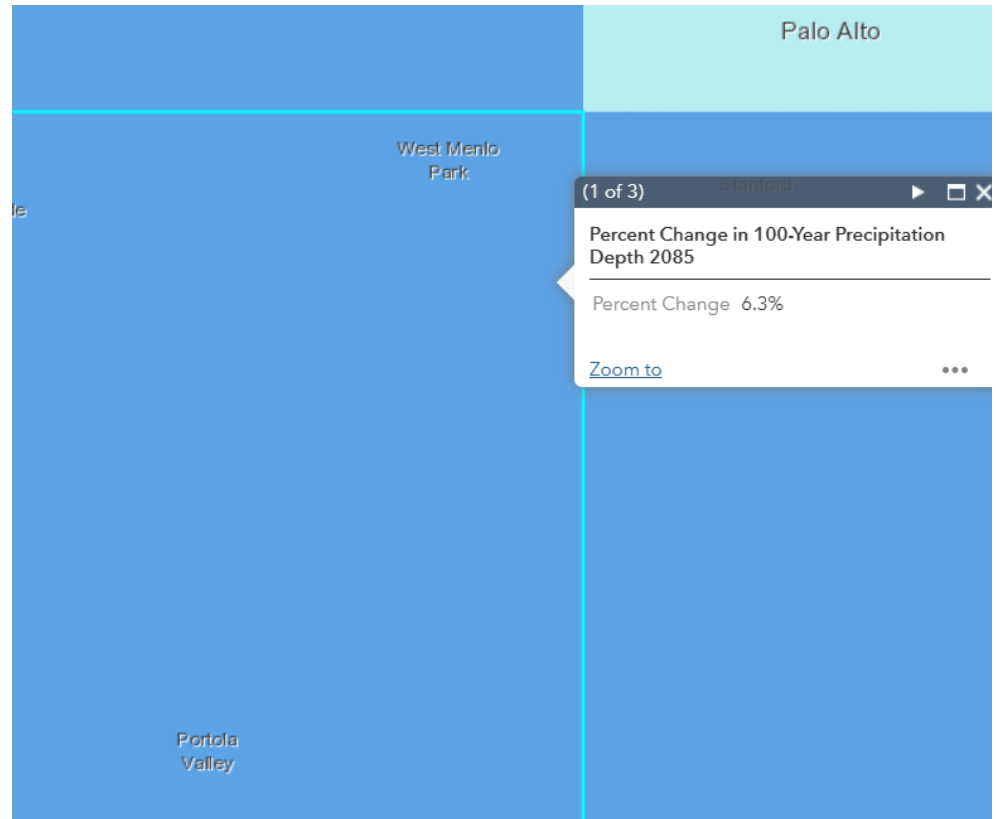
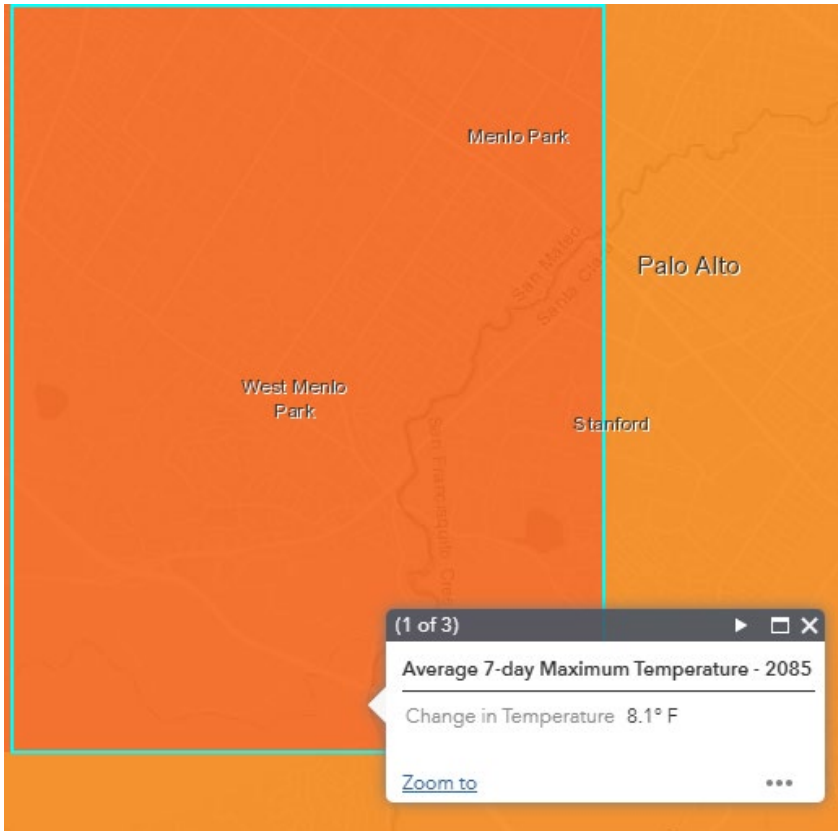
**Section 11: Freight Considerations (OPTIONAL)**

11-1 FREIGHT OPPORTUNITIES AND CONSIDERATIONS	
11-1-1 Are there any known unauthorized truck parking issues or deficiencies along the route?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
11-1-2 Are there any existing or planned restrictions/limitations pertaining to truck weight or height?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>Describe.</i>
11-1-3 Identify truck usage impacts within the project area: <input type="checkbox"/> Truck Bottleneck/Congestion <input type="checkbox"/> Distressed Pavement <input type="checkbox"/> Truck Geometric Constraints <input type="checkbox"/> Shoulder Width <input type="checkbox"/> Shoulder Dust Issues <input type="checkbox"/> Bridge Conditions	I-280 is on the STAA truck network. It is also identified on the National Multimodal Freight Network (NMFN)
11-1-4 Check if apply: <input type="checkbox"/> The project area contains Intermodal connections to other freight facilities (sea ports, rail, airport) <input type="checkbox"/> Freight key services along route	<i>Add text if needed.</i>
11-1-5 Are there any opportunities for Truck Parking, based on SRRA Master Plan or any relevant truck parking studies?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>Describe.</i>
11-1-6 Identify opportunities for zero emission fueling (electric charging, hydrogen) for vehicles including trucks.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>Describe.</i>

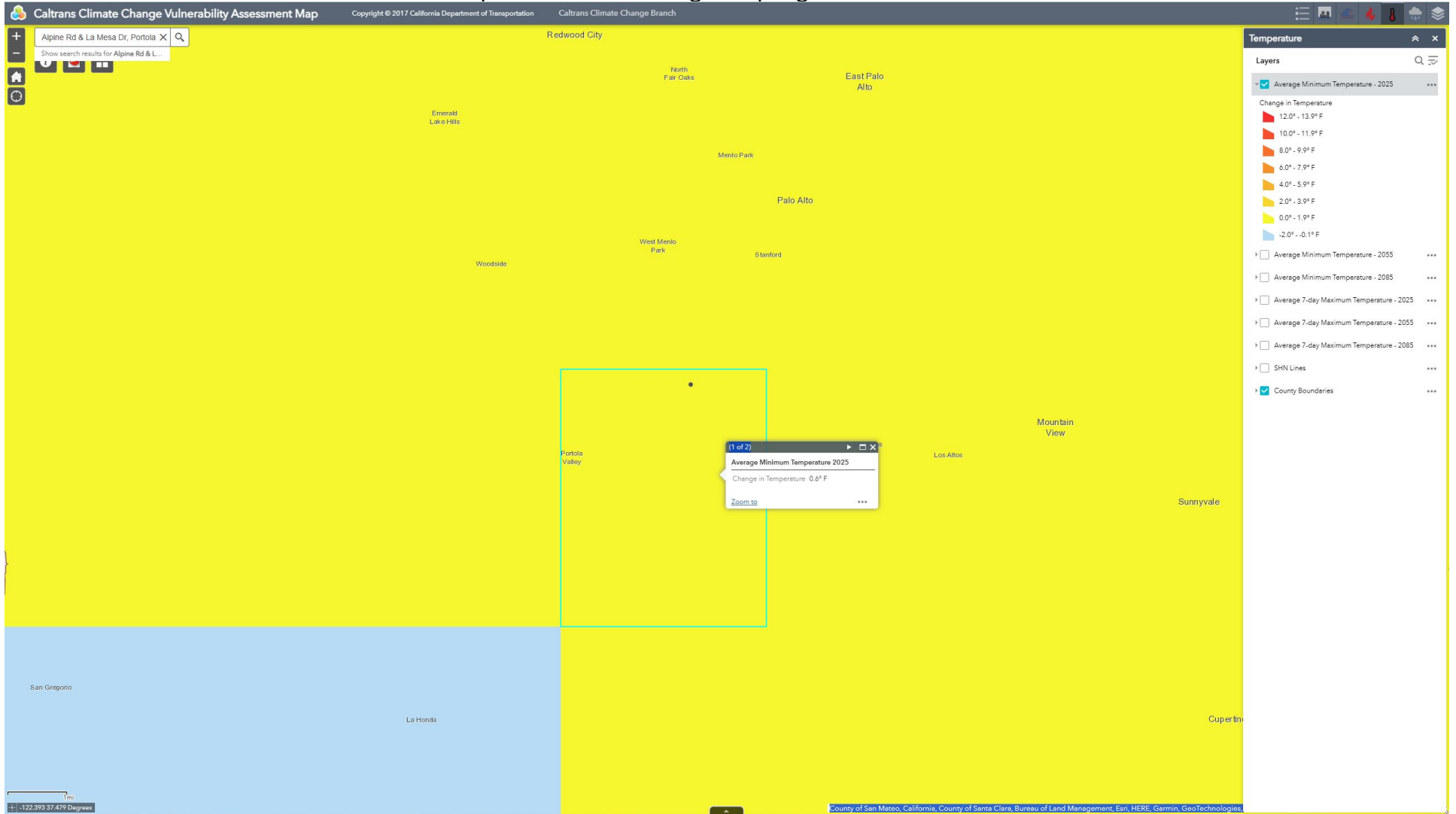
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## SEGMENT MAP/PICTURES (OPTIONAL)

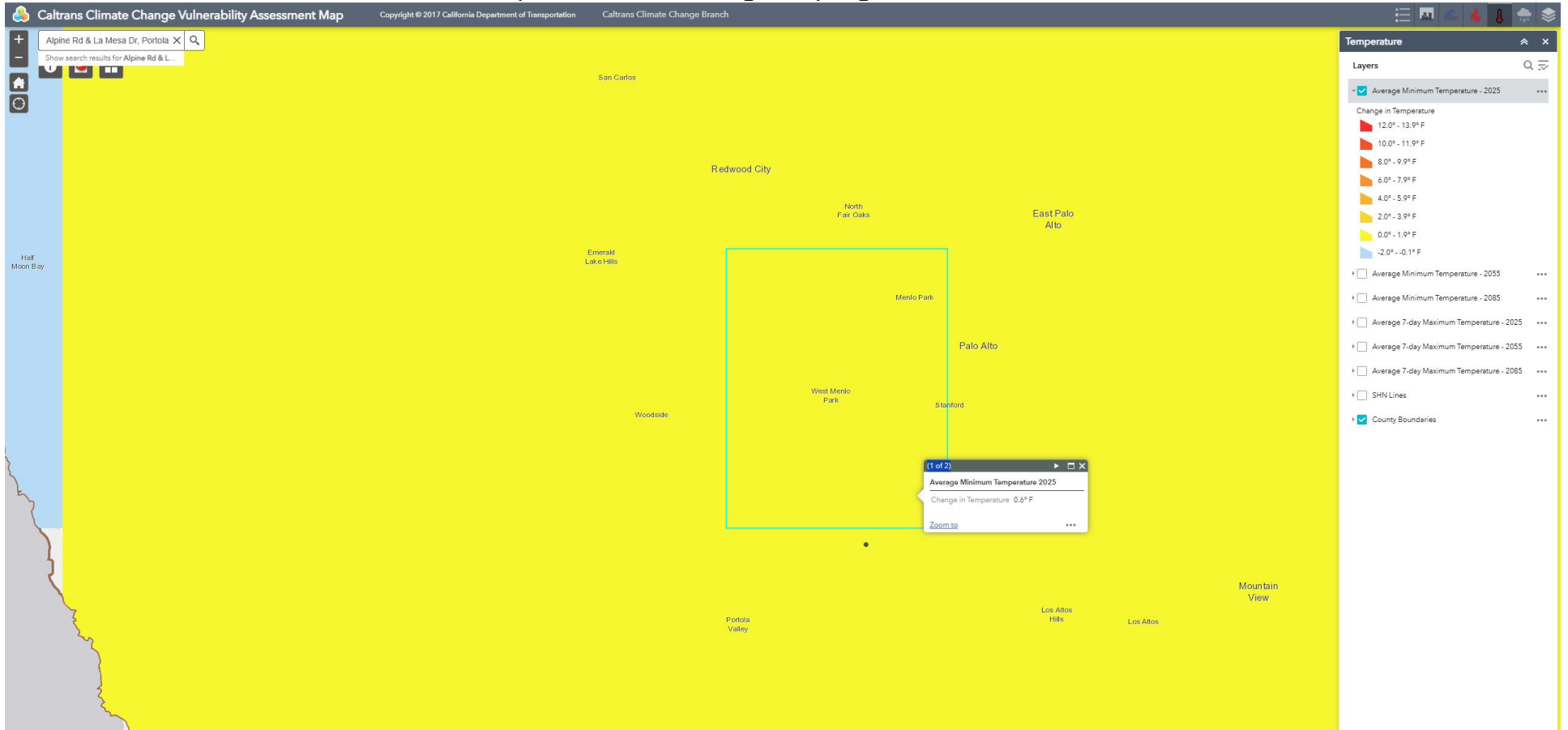
The highlighted box indicates the project location, where the average 7-day maximum temperature is projected to increase by 8.1°F and the 100-year precipitation depth is expected to increase by 6.3% by the year 2085.



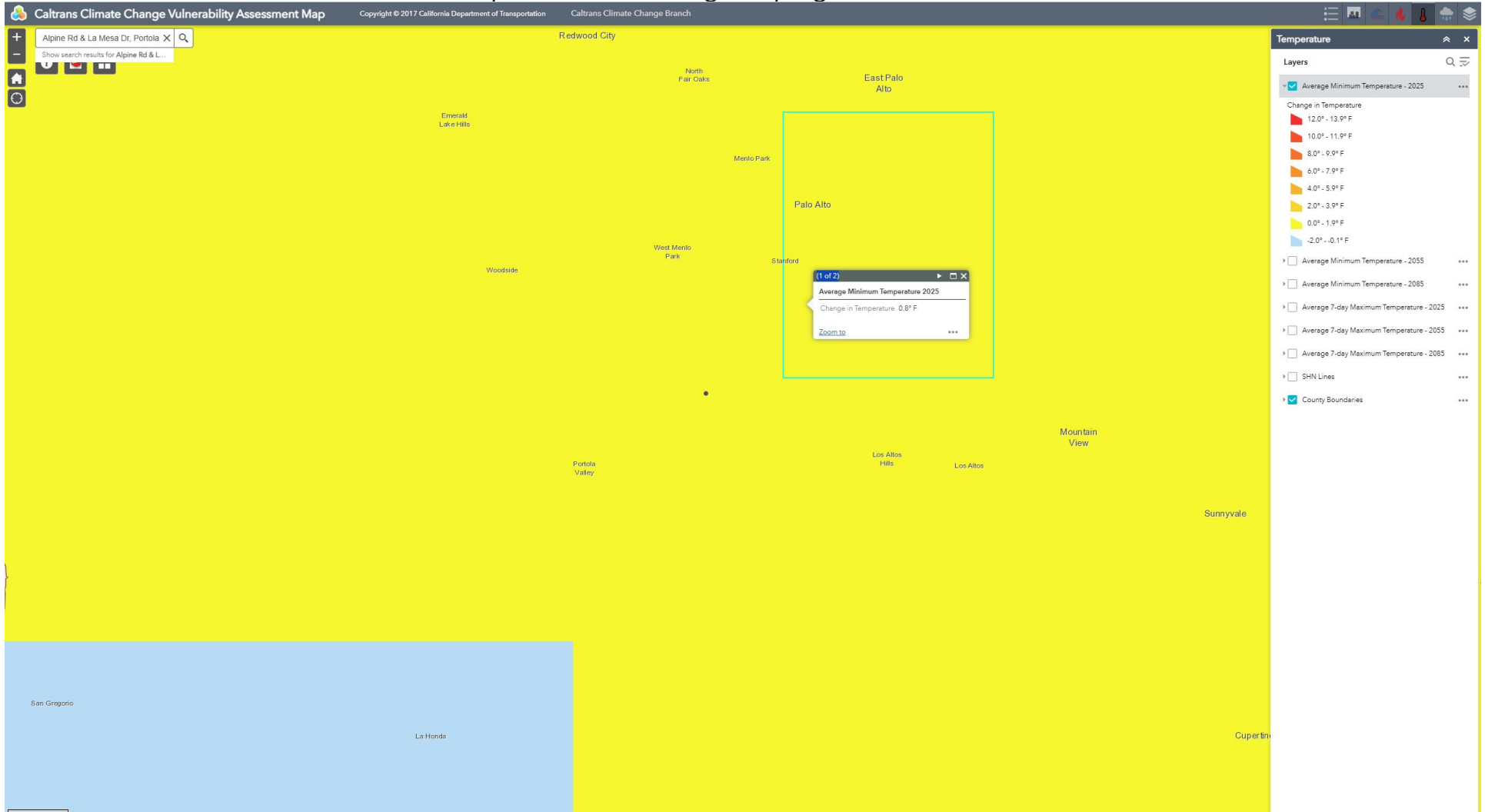
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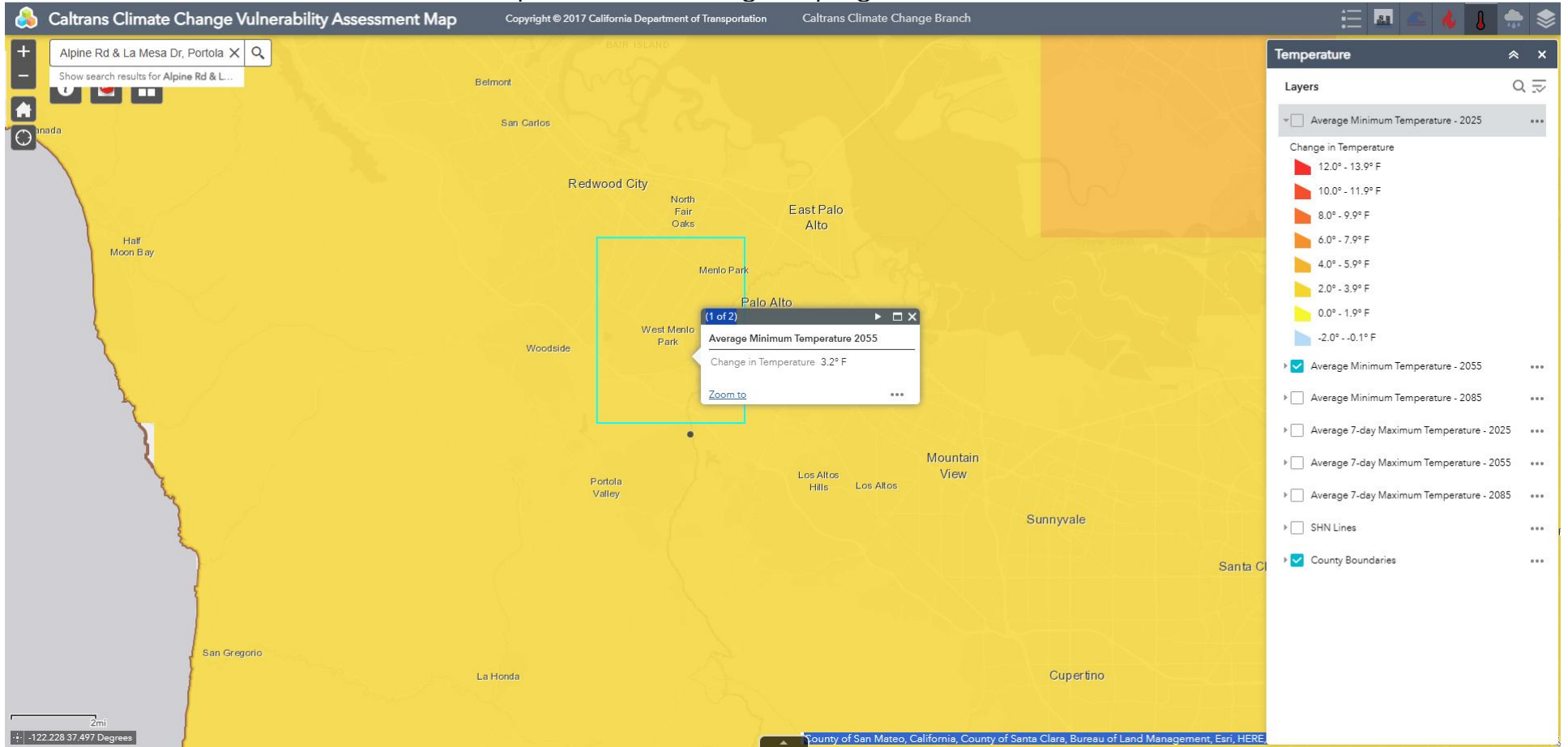
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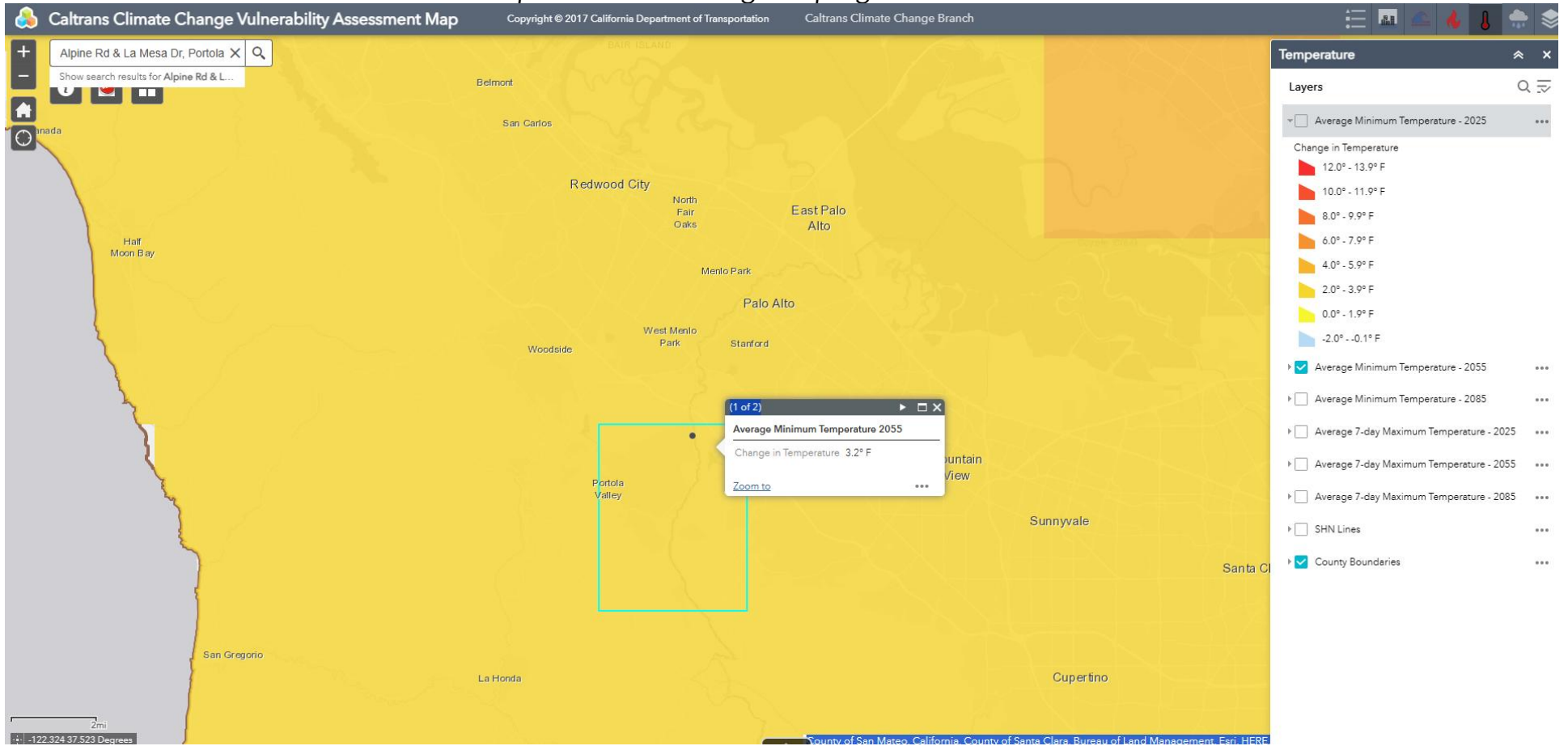
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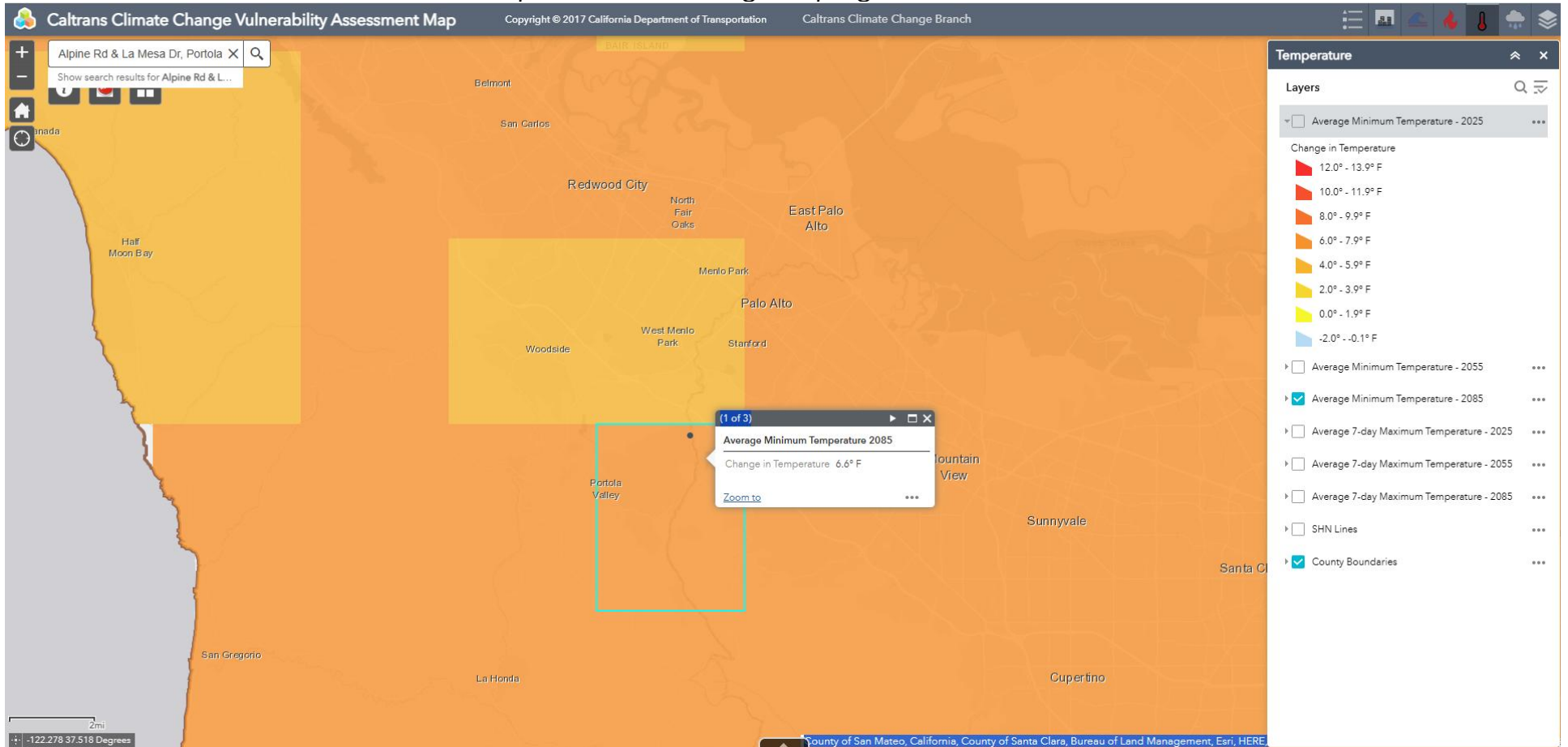
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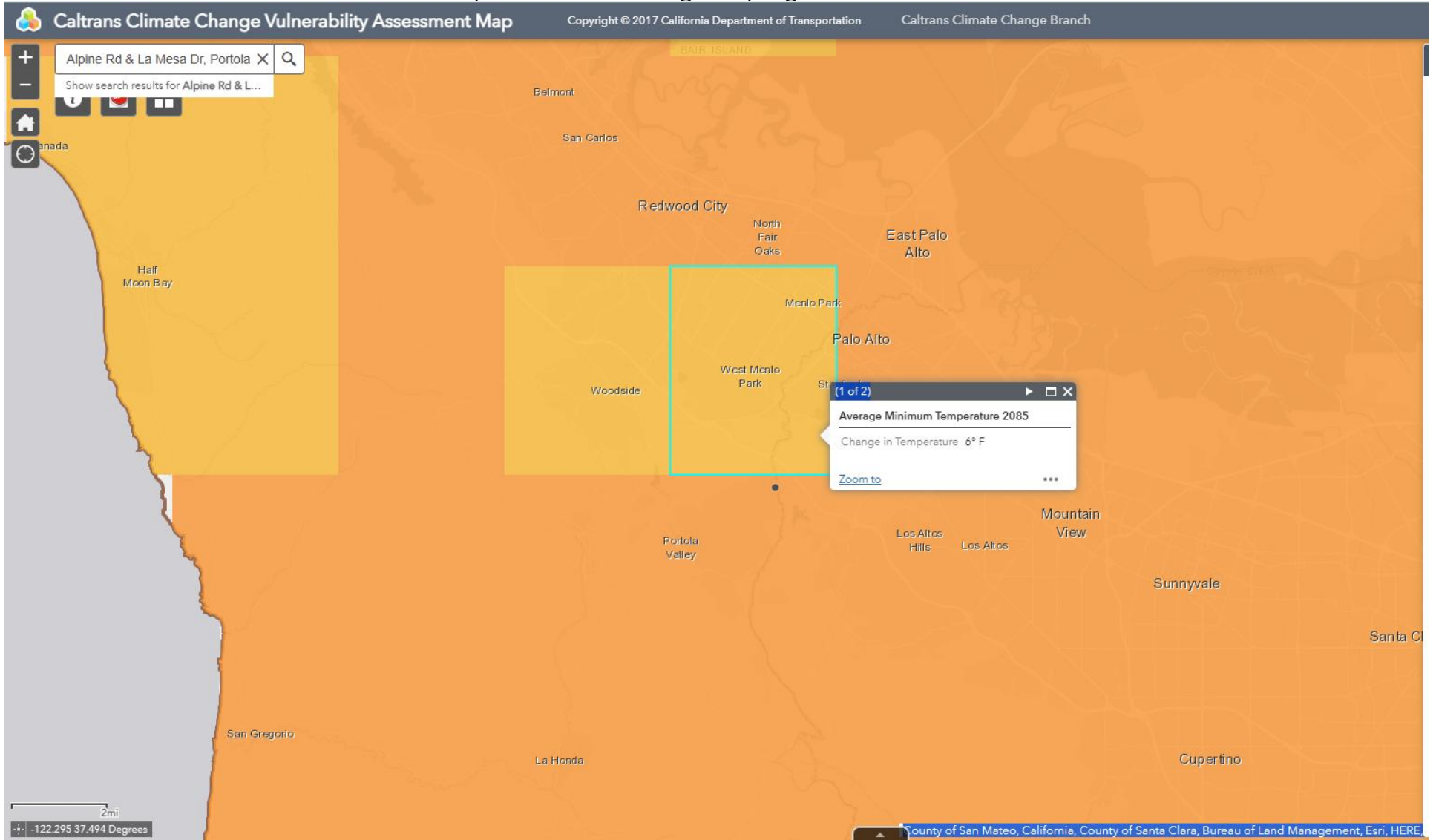
# Transportation Planning Scoping Information Sheet



# Transportation Planning Scoping Information Sheet



# Transportation Planning Scoping Information Sheet



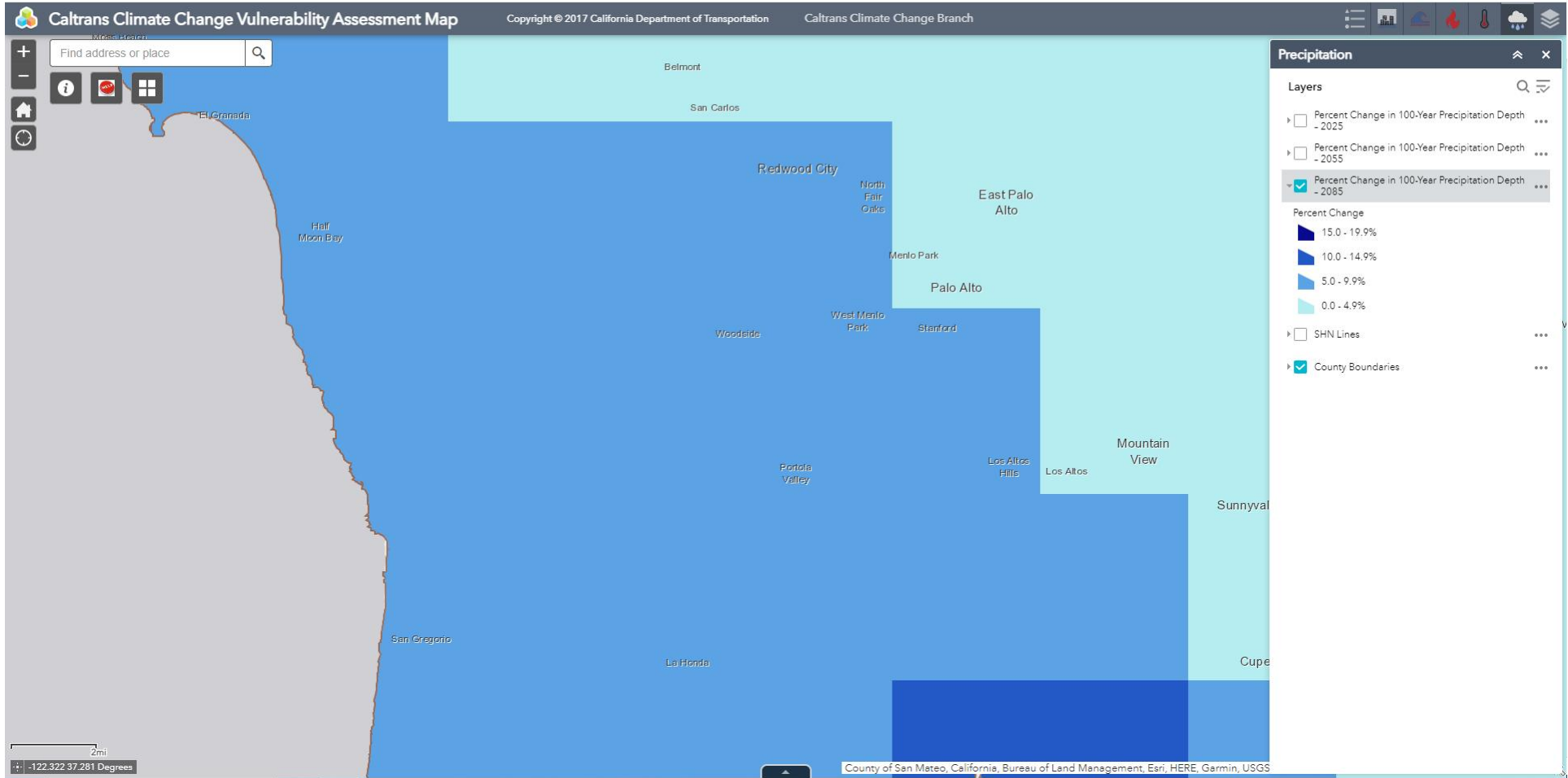
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# Transportation Planning Scoping Information Sheet



# Transportation Planning Scoping Information Sheet



# **Attachment H**

## **Risk Register**

RISK REGISTER LEVEL			2	PROJECT NAME	Alpine Road Corridor Improvement Project			DIST-EA	04-1Q710	Project Manager (SMCTA)	Liliana Price	RISK MANAGER	Prasanna Muthireddy	PROJECT PHASE		PID	PSR-PDS
Risk Identification												Risk Response					
Status	ID #	Type	Category	Title	Risk Statement	Current Status/ Assumptions	Probability	Cost Impact	Score	Time Impact	Score	Rationale	Strategy	Response Actions	Risk Owner	Updated	
Active	1	Threat	Design	Design Standard Changes	As a result of new or revised design standards, design scope could be impacted and could lead to additional cost or schedule delays during the PA&ED and during the final design phase.	Project alternatives are following the current local and Caltrans guidelines and standards.	2-Low	02-Low	4	02-Low	4	The project team cannot control changing design standards.	Mitigate	Will monitor new design standards changes and bring it to the PDT's attention to assess against project improvements.	KH Project Manager	2/5/2025	
Active	2	Threat	Design	Design Change per Stakeholder Input	As a result of stakeholder priorities and input, different design concepts may need to be considered, which would lead to scope, cost, and schedule changes.	Proposed improvements are based on previous corridor study and are updated with input from stakeholder outreach during PID and will continue into PA&ED.	4-High	04-Moderate	16	04-Moderate	16	Initial feedback received by the County and from stakeholders during PID outreach show high potential for changes in design and consideration of evacuation plans and other factors in PA&ED	Mitigate	Stakeholder engagement will continue to be conducted as part of the PA&ED phase and results will be monitored and incorporated as early as possible.	County Project Manager	2/5/2025	
Active	3	Threat	PM	Stakeholder Consensus	As a result of conflicting interest from various stakeholders, consensus on project improvements may not be reached which would lead to schedule delays.	Stakeholder outreach is conducted as part of the PID phase and will be continued into PA&ED to achieve consensus.	4-High	04-Moderate	16	04-Moderate	16	Initial feedback received by the County and from stakeholders during PID outreach show high potential for stakeholder conflicts	Mitigate	Stakeholder engagement will continue to be conducted as part of the PA&ED phase to gain consensus as early as possible.	County Project Manager	2/5/2025	
Active	4	Threat	Construction	Unknown Site Condition	Unanticipated site conditions may be encountered during construction leading to extra work for relocation or mitigation resulting in additional project costs and schedule delays.	Design is based on what is captured in the aerial imagery, as-builts, desktop surveys, and visibly from site visits.	3-Moderate	04-Moderate	12	04-Moderate	12	Coordination with various agencies and collection of record maps has begun during PID phases, to help identify impacts.	Mitigate	Obtain any recently built project as-builts during PA&ED phase, modify design to avoid impacts, obtain topographic mapping during PS&E phase, USA during Construction.	KH Project Manager	8/21/2024	
Active	5	Threat	Design	Topographic Information	Inadequate Topographic information could lead to changes in design, resulting in impacts to project cost in future phases.	Aerial imagery and as-built information are being used to develop preliminary alternatives. Survey work will be done under the PA&ED or PS&E phase.	3-Moderate	04-Moderate	12	04-Moderate	12	The risk is based on the usage of aerial imagery and as-built information to develop preliminary engineering drawings.	Accept	Topographic survey will be conducted in the PA&ED or PS&E phase, additional supplemental design surveys will also be included in PS&E scope and will be the first order of work.	KH Project Manager	8/21/2024	
Active	6	Threat	Design	Utility Relocations	As a result of unknown utilities encountered as the project progresses, new impacts may be identified, resulting in redesign of improvements or schedule and cost impacts.	Only preliminary utility engineering design work will typically occur before environmental document approval during the PA&ED phase.	3-Moderate	04-Moderate	12	04-Moderate	12	The project cannot directly control the activities of third-party utilities.	Mitigate	Involve third party stakeholders as early as practicable and avoid utility-related claims through enhanced contract mechanisms designed specifically for addressing utility issues.	KH Project Manager	8/21/2024	
Active	7	Threat	Construction	Hazardous Materials	As a result of limited testing in PID phase, it is possible that hazardous materials could be encountered at locations near the project improvements, which could lead to avoidance or mitigation needs resulting in increases in project cost and schedule.	Current design is based on aerial imagery and preliminary desktop surveys.	3-Moderate	04-Moderate	12	04-Moderate	12	Conditions are currently unknown in the PID phase and will be studied in detail in the PA&ED phase.	Accept	Based on detailed studies in the PA&ED and PS&E phase, revise design to avoid potential hazardous materials. Where this is not possible, proactively address hazardous material mitigation or disposal early if possible, and seek solutions including option of bury hazardous material on-site if feasible.	KH Project Manager	8/21/2024	
Active	8	Threat	Environmental	Scope of Environmental Studies	As a result of desktop surveys in PID phase, potential impacts to the project might be impacting highly sensitive environmental resources which would result in additional scope and cost for the PA&ED phase.	PEAR will identify appropriate scope of environmental studies during the PA&ED phase.	3-Moderate	04-Moderate	12	02-Low	6	Scope of environmental studies identified in the PEAR	Accept	The scope of environmental studies will be identified in PEAR. Project must accept some risk for additional environmental studies in PA&ED where more information will become available.	County and SMCTA Project Managers	2/5/2025	
Active	9	Threat	PM	Funding	As a result of inadequate funding, project development may not advance into next phases, which would lead to a delay in project implementation schedule	The project is currently not funded past the PID phase. Agency will seek funding opportunities as the project progresses into subsequent phases.	2-Low	04-Moderate	8	08-High	16	SMCTA is the implementing agency for the project and will be seeking funding for the project.	Mitigate	Seek funding sources early in the project development phase.	County and SMCTA Project Managers	8/21/2024	
Active	10	Threat	ROW	Additional Right-of-way Needs	As the project progresses into PA&ED phase, project design will be refined, which may result in additional ROW acquisition needs, which would lead to an increase in cost and schedule delays.	ROW costs are based on PSR PDS design and available ROW data.	3-Moderate	08-High	24	08-High	24	Based on increased right-of-way costs and time for acquisition.	Mitigate	Identify ROW requirements early in the PID phase and update as the project design progresses.	County Project Manager	8/21/2024	
Active	11	Threat	PM	Scope Changes	As a result of stakeholder engagement, additional alternatives or significant scope changes may occur, which may lead to delays in project delivery and increase in cost.	The project currently assumes no scope changes or additional alternatives	3-Moderate	04-Moderate	12	04-Moderate	12	Cost impacts are based on stakeholder coordination that has occurred to date, as well as possible scope changes that could arise from stakeholder expectations.	Avoid	Engage stakeholders in the PID phase and build consensus on project scope and alternatives. Project Team to monitor this risk and update after outreach meetings.	County Project Manager	8/21/2024	

RISK REGISTER LEVEL		2		PROJECT NAME		Alpine Road Corridor Improvement Project		DIST-EA	04-1Q710	Project Manager (SMCTA)	Liliana Price	RISK MANAGER	Prasanna Muthireddy	PROJECT PHASE		PID	PSR-PDS
Risk Identification													Risk Response				
Status	ID #	Type	Category	Title	Risk Statement	Current Status/ Assumptions	Probability	Cost Impact	Score	Time Impact	Score	Rationale	Strategy	Response Actions	Risk Owner	Updated	
Active	12	Threat	PM	Timely Reviews and Approvals	As a result of stakeholder engagement, change in project scope, or staff availability, delays in review and approval of PID documents may occur, which results in schedule delay.	Project schedule is currently based on project background information from corridor study, standard PID review cycles, and project improvement input from County.	3-Moderate	02-Low	6	04-Moderate	12	Based on current status of PID review times and cycles.	Avoid	Engage PDT groups early on regarding schedules to provide adequate times for review.	County Project Manager	2/5/2025	
Active	13	Threat	Construction	Climate Vulnerability	As a result of the existing climate conditions, extreme precipitation and temperatures could occur in the project area.	Construction schedule shall build buffer for these schedule risks.	3-Moderate	02-Low	6	04-Moderate	12	Based on construction schedule timeline	Mitigate	Engage Construction team early on, to help mitigate schedule delays due to climate	County Project Manager	4/9/2025	

# **Attachment I**

## **Complete Streets Decision Document**

**(CSDD)**

### Complete Streets Decision Document (CSDD)

- 1) Is the project located entirely on a facility where bicyclists and pedestrians are legally prohibited and the project does not involve a shared use path, pedestrian/bicycle structure or work impacting a local road crossing or interchange? (For example, a project including freeway mainline and ramp work, not including the ramp connection with the minor road, where the project freeway segment legally prohibits bicyclists and pedestrians.)

NO - Proceed to Question 2

YES - Stop here. The project is exempt from further complete streets evaluation. Sign and attach to the Project Initiation Document (PID).

- 2) Is the primary project purpose to address assets that are outside of the roadbed where pedestrian and bicycle travel is not affected, and proposed project will not affect future pedestrian and bicycle facilities? Examples may include culvert outfalls, storm water treatment facilities, bridge substructure or scour mitigation, planting or vegetation removal, retaining walls, etc.

NO - Continue to Question 3

YES - Stop here. The project is exempt from further complete streets evaluation. Sign and attach to PID.

- 3) Has a Transportation Planning Scoping Information Sheet (TPSIS) been completed for this project?

NO – Proceed to Question 4

YES – Skip to Question 5 (Note: TPSIS is attached to the PID)

- 4) Which of the following planning documents were consulted to determine bicycle, pedestrian or transit needs? Select all that apply and proceed to Question 5.

a. District Active Transportation Plan

b. Other Caltrans or local/regional agency bike/ped/transit/safe routes to school plans

c. ADA Transition Plan/Grievances (consult with the District ADA Coordinator)

d. Corridor planning documents

e. Other (list here) \_\_\_\_\_

- 5) Based on the reviews completed in Question 4 or identified in the TPSIS, after a review of the roadway geometrics, or identified by the PDT, are there any bicycle, pedestrian, or transit needs, deficiencies or opportunities for improvement identified for the project location?

NO – Provide brief description of findings: \_\_\_\_\_

Stop here. The project meets the requirements for consideration of Complete Streets elements. Sign and attach to the PID.

YES – Describe them here and proceed to Question 6: \_\_\_\_\_

In 2017, the Alpine Road Corridor Study Project was prepared along the project corridor, which helped to develop the needs of the study corridor as defined by the baseline analysis and community input.

The community input helped shaped the layout of initial alternatives, as attendees stressed the importance of bicycle and pedestrian safety along the corridor. This corridor study identified the initial project scope for the Project Initiation Document and PSR-PDS.

Potential opportunities for improvement for bicycle, pedestrian, and transit needs as identified in the 2017 Corridor Study and during a review of the roadway geometrics include:

- Shifting crosswalks to intersections to improve visibility
- Dashed green paint in all conflict areas and extension of buffered bike lanes where applicable
- Class IV separated bikeway along the Caltrans R/W corridor, to protect bicyclists from vehicular traffic
- Sidewalk Connectivity
- Signalized intersections or Roundabouts

6) Based on the needs identified in Question 5, what would be the preferred complete streets elements to address those needs (e.g. road diet, separated bikeway, reconstructed sidewalk, etc.)? Resources include the Complete Streets Elements Toolbox, the Contextual Guidance for Bikeway Facility Selection, the Bikeway Facility Selection Guidance Memorandum, etc. List them in the table below and provide a rough estimated cost to construct preferred project complete streets elements (including right-of-way and support costs) and proceed to Question 7.

FACILITY TYPE	UNIT	QUANTITY	ESTIMATED TOTAL COST
<b>Alternative 1</b>			
Class II Buffered Bike Lane	LF	<b>2220</b>	<b>\$ 888,000.00</b>
Green Colored Pavement	EA	<b>4</b>	<b>\$ 13,200.00</b>
New Crosswalk	LF	<b>200</b>	<b>\$ 3,600.00</b>
New sidewalk	LF	<b>2410</b>	<b>\$ 257,860.00</b>
<b>Alternative 2</b>			
Class IV Bikeway	LF	<b>8120</b>	<b>\$ 389,460.00</b>
Green Colored Pavement	EA	<b>5</b>	<b>\$ 6,000.00</b>
Crossing Islands	EA	<b>2</b>	<b>\$ 17,630.00</b>
Roundabout	EA	<b>2</b>	<b>\$ 2,000,000.00</b>
New Crosswalk	LF	<b>100</b>	<b>\$ 1,800.00</b>
New sidewalk	LF	<b>3220</b>	<b>\$ 344,660.00</b>

7) Was there any known public and stakeholder opposition to any preferred complete streets elements identified for the project? Provide response and proceed to Question 8.

NO  
 YES – Describe the opposition position here: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

8) Does the programmable project alternative/project scope include all the complete streets elements identified in Question 6?

NO - Proceed to Question 9  
 YES - Stop here. The project has met the requirements for consideration of complete streets elements. Sign and attach to PID.

9) Does the project include any of the complete streets elements that are identified in Question 6? Or are there any proposed incremental improvements related to the complete streets elements in Question 6? Provide response and proceed to Question 10.

NO – The programmable project alternative does not include any complete streets elements, and therefore does not address identified needs for complete streets elements.

\_\_\_\_\_ YES – List them here:

FACILITY TYPE	UNIT	QUANTITY	ESTIMATED TOTAL COST

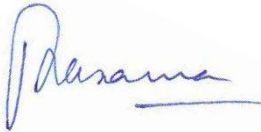
10) Does the project funding have constraints that would preclude the ability to incorporate additional complete streets elements into the project (For example, cannot combine funding with other sources.)? Provide response and proceed to Question 11.

\_\_\_\_\_ NO  
 \_\_\_\_\_ YES – Describe the constraints here: \_\_\_\_\_

11) Provide a rationale and justification for not including all the recommended complete streets elements into the project: (Consider the engineering justification, right-of-way constraints, environmental impacts, etc.). \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Prepared by:




\_\_\_\_\_  
 Prasanna Muthireddy  
 Kimley-Horn

Concurred by:



\_\_\_\_\_  
 Sergio Ruiz  
 District Complete Streets Coordinator

6/25/2025  
 \_\_\_\_\_  
 Date



\_\_\_\_\_  
 Cameron Oakes  
 Deputy District Director, Transportation Planning  
 and Local Assistance

08/21/2025  
 \_\_\_\_\_  
 Date

Wajahat.

Wajahat Nyaz  
Deputy District Director, Design

08/27/2025

Date

David Ambuehl

David Ambuehl (Aug 27, 2025 16:00:29 PDT)

David Ambuehl  
Acting District Director

08/27/2025

Date

*Distribution: Attach completed original CSDD to PID and email to HQ Division of Design at CSDD@dot.ca.gov*

**Revalidation of CSDD at PA&ED**

Does the project scope defined in the project approval document include the complete streets elements identified in Question 6 or 9 of this CSDD and the PID?

\_\_\_\_\_ NO – Prepare a Superseding CSDD (answer Questions 1 through 11) replacing the original CSDD, obtain all certified and concurrence signatures below, and attach the superseding CSDD to the project approval document. Email superseding CSDD to HQ Division of Design at CSDD@dot.ca.gov.

\_\_\_\_\_ YES – Certify there are no changes to the scope of complete streets elements with only the project engineer certification signature below on the original approved CSDD and attach the CSDD to the project approval document. Email revalidated CSDD to HQ Division of Design at CSDD@dot.ca.gov.

Certified by:

\_\_\_\_\_  
Name, Project Engineer  
Branch/Company

\_\_\_\_\_  
Date

Concurred by: *(Include concurrence signatures only if a Superseding CSDD is prepared.)*

\_\_\_\_\_  
Name  
District Complete Streets Coordinator

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name  
Deputy District Director, Planning

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name  
Deputy District Director, Design or  
Division Chief, Design/Project Development

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name  
District Director

\_\_\_\_\_  
Date

**Revalidation of CSDD at PS&E**

Does the project scope designed in the plans, specifications and estimate include the complete streets elements identified in Question 6 or 9 of the CSDD (or Superseding CSDD, if applicable) certified at the PA&ED revalidation and the project approval document?

\_\_\_\_\_ NO – Prepare a Superseding CSDD (answer Questions 1 through 11) replacing the CSDD that was approved at PA&ED revalidation, obtain all certified and concurrence signatures below, and attach to the Supplemental PR. If a Supplemental PR is not required, place in the project history file. Email superseding CSDD to HQ Division of Design at CSDD@dot.ca.gov.

\_\_\_\_\_ YES – Certify there are no changes to scope of complete streets elements in the project, and that temporary bike and pedestrian facilities during construction have been considered. Include only the project engineer certification signature below on the CSDD that was approved at PA&ED revalidation and place the CSDD in the project history file. Email revalidated CSDD to HQ Division of Design at CSDD@dot.ca.gov.

Certified by:

\_\_\_\_\_  
Name, Project Engineer  
Branch/Company

\_\_\_\_\_  
Date

Concurred by: *(Include concurrence signatures only if a Superseding CSDD is prepared.)*

\_\_\_\_\_  
Name  
District Complete Streets Coordinator

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name  
Deputy District Director, Planning

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name  
Deputy District Director, Design or  
Division Chief, Design/Project Development

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name  
District Director

\_\_\_\_\_  
Date

## **Attachment J**

# **Transportation Management Plan (TMP)**

# TRANSPORTATION MANAGEMENT PLAN DATA SHEET

Alternative 1

For Consultant TMP Projects

PROJECT MANAGER: Liliana Price
PROJECT ENGINEER: Prasanna Muthireddy (925) 398-4855
DIST-EA: 04-1Q710 PROJ ID: 041800320 PROGRAM CATEGORY: 4B
PROJECT COMMON NAME: ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT
CO-RTE-PM: 04 – SM - 280 – .04
LEGAL DESCRIPTION: In San Mateo County, on Route Alpine Road between I-280 EB and I-280 WB.
<p>San Mateo County, in cooperation with the San Mateo County Transportation Authority (SMCTA) and Caltrans proposes the Alpine Road Corridor Improvement Project (project) located in San Mateo County at Alpine Road interchange on Interstate – 280 (I-280). The project proposes measures to improve multimodal access, mobility, circulation, and enhance safety along Alpine Road and at I-280 interchange. A Project location map is included as Attachment A.</p> <p>The full project extends from south of La Mesa Drive on Alpine Road to North of Stowe Lane on Alpine Road. However, this PSR-PDS encompasses the portion of the project that is within Caltrans right of way, between the I-280 southbound and northbound ramp intersections. The project is anticipated to include the following elements within Caltrans right of way:</p> <ul style="list-style-type: none"> <li>• Improve the existing intersection operations at I-280 ramps by replacing the existing side-street-stop control and all-way-stop control with either signals or roundabouts as the intersection control.</li> <li>• Replace free right turns at I-280 ramps with controlled and slow turning movements.</li> <li>• Improve existing bicycle and trail facilities where applicable to provide a continuous and low stress bicycle and pedestrian corridor.</li> <li>• Provide high-visibility crosswalks at intersections.</li> <li>• Install necessary signage and pavement markings to implement the above improvements.</li> </ul>
CONSTRUCTION COST ESTIMATE: \$18,140,000- \$22,271,000
PROJECT PHASE:      PIR <input checked="" type="checkbox"/> PR <input type="checkbox"/> PS&E <input type="checkbox"/> _____%

## Traffic Impact Descriptions

A) Does the proposed project includes long term closures ( > 24 hours)

Yes\_\_\_ No\_\_X\_

[If "No", Continue to Item D (Preliminary TMP Elements and Costs.). If "Yes", Check Applicable Facilities.]

- Freeway Lanes
- Freeway Shoulder
- Freeway Connectors
- Freeway Off-ramps
- Freeway On-ramps
- Local Streets
- Full Freeway Closures

B) Are there any construction strategies that can restore existing number of lanes?  
(Check Applicable Strategies)

- Temporary Roadway Widening Structure Involvement? Yes\_\_\_ No\_\_\_  
(If yes, notify Project Manager)
- Lane Restriping (Temporary Narrow Lane Widths) Yes\_\_\_ No\_\_\_
- Roadway Realignment (Detour Around Work Area)
- Median and/or Right Shoulder Utilization
- Use of an HOV lane as a Temporary Mixed Flow Lane
- Staging Alternatives (Explain Below)

Notes:

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C) Calculated Delays (To be performed if construction strategies in Item B do not mitigate congestion resulting from Item A)

1. Estimated Maximum Individual Vehicle Delay \_\_\_\_\_Minutes
2. Existing or Acceptable Individual Vehicle Delay \_\_\_\_\_Minutes
3. Estimated Individual Vehicle Delay Requiring Mitigation  
[(1) - (2)] \_\_\_\_\_Minutes
4. Estimated Delay Cost (Most Applicable)
  - Extended Weekend Closure \$ \_\_\_\_\_
  - Weekly (7 days) \$ \_\_\_\_\_
5. Estimated Duration of Project Related Delays \_\_\_\_\_
6. Cost of Construction Related Delays [(4 x 5)] \$ \_\_\_\_\_

D) Preliminary TMP Elements and Cost

1. Public Information
 

<input checked="" type="checkbox"/>	a. Brochures and Mailers	\$6,000
<input checked="" type="checkbox"/>	b. Press Release	\$4,000
<input type="checkbox"/>	c. Paid Advertising	\$ _____
<input type="checkbox"/>	d. Public Information Center/Kiosk	\$ _____
<input checked="" type="checkbox"/>	e. Public Meeting/Speakers Bureau	\$6,000
<input type="checkbox"/>	f. Telephone Hotline	\$ _____
<input checked="" type="checkbox"/>	g. Internet	\$4,000
<input checked="" type="checkbox"/>	h. Notification to impacted groups (Bicycle users, Pedestrians with disability, others.)	\$4,000
<input type="checkbox"/>	i. Others _____	\$ _____
<b>SUB TOTAL</b>		<b>\$24,000</b>

2. Motorists Information strategies
- a. Changeable Message Signs (Fixed) \$ \_\_\_\_\_
  - b. Changeable Message Signs (Portable) \$60,000
  - c. Ground Mounted Signs \$10,000
  - d. Highway Advisory Radio \$ \_\_\_\_\_
  - e. Caltrans Highway Information Network (CHIN) \$ \_\_\_\_\_
  - f. Revised Transit Schedules/Maps \$ \_\_\_\_\_
  - g. Others \_\_\_\_\_ \$ \_\_\_\_\_

SUB TOTAL \$70,000

3. Incident Management
- a. Construction or Maintenance Zone Enhanced Enforcement Program (COZEEP or MAZEEP) \$285,000
  - b. Freeway Service Patrol \$ \_\_\_\_\_
  - c. Traffic Management Team \$ \_\_\_\_\_
  - d. New CCTVs and Detectors \$ \_\_\_\_\_
  - e. Others \_\_\_\_\_ \$ \_\_\_\_\_

SUB TOTAL \$285,000

4. Construction Strategies (In Addition to Elements Identified on Item B)
- a. Off Peak/Night/Weekend Work (Lane Closure Charts) \$57,000
  - b. Reversible Lanes \$ \_\_\_\_\_
  - c. Total Facility Closure \$ \_\_\_\_\_
  - d. Extended Weekend Closure \$ \_\_\_\_\_
  - e. Truck Traffic Restrictions \$ \_\_\_\_\_
  - f. Reduced Speed Zone \$29,000
  - g. Connector and Ramp Closures \$57,000
  - h. Incentive and Disincentive \$ \_\_\_\_\_
  - i. Moveable Barrier \$ \_\_\_\_\_
  - j. Others \_\_\_\_\_

SUB TOTAL \$143,000

5. Demand Management
- a. HOV Lanes/Ramps (New or Convert) \$ \_\_\_\_\_
  - b. Park and Ride Lots \$ \_\_\_\_\_
  - c. Rideshare Incentives \$ \_\_\_\_\_
  - d. Variable Work Hours \$ \_\_\_\_\_
  - e. Telecommute \$ \_\_\_\_\_
  - f. Ramp Metering (New Installation) \$ \_\_\_\_\_
  - g. Ramp Metering (Maintain Existing) \$ \_\_\_\_\_
  - h. Others \_\_\_\_\_ \$ \_\_\_\_\_

SUB TOTAL \$0

6. Alternate Route Strategies
- a. Add Capacity to Freeway Connector \$ \_\_\_\_\_
  - b. Street Improvement \$ \_\_\_\_\_  
(widening, traffic signal, etc)
  - c. Traffic Control Officers \$ \_\_\_\_\_
  - d. Parking Restrictions \_\_\_\_\_
  - e. Others not used \$ \_\_\_\_\_

SUB TOTAL      \$0

7. Other Strategies
- a. Application of New Technology \$ \_\_\_\_\_
  - b. Others not used \$ \_\_\_\_\_

SUB TOTAL      \$0

8. The Project includes the following: (Check applicable type of facility closures)

- a. Highway or Freeway Lanes
- b. Highway or Freeway Shoulders
- c. Full Freeway Closure
- d. Freeway On/Off-Ramps
- e. Freeway Connectors
- f. Local Streets
- g. Prolonged Ramp Closures

9. Major operations requiring traffic control and working days for each

<u>Operation</u>	<u># of Working</u>	<u># of Traffic</u>
	<u>Days</u>	<u>Control Days</u>
<input type="checkbox"/> a. Clearing and Grubbing	12	2
<input type="checkbox"/> b. Existing Feature Removal	13	2
<input type="checkbox"/> c. Excavation of Embankments Construction	25	2
<input type="checkbox"/> d. Structural Section Construction	100	50
<input type="checkbox"/> e. Drainage Feature Construction	25	5
<input type="checkbox"/> f. Structures Construction	13	1
<input type="checkbox"/> g. MGS/Barrier Construction	25	18
<input type="checkbox"/> h. Striping	12	3
<input type="checkbox"/> i. Electrical Component Construction	13	10
<input type="checkbox"/> j. Other	12	2
Total days	250	95

TOTAL ESTIMATED COST OF TMP ELEMENTS      =      \$522,000

Notes :

Assumptions/ Comments:

Assumptions/ Comments:

- 
1. Entire project will take approximately 250 working days to construct.

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  2. Current dollar values used. Inflation was not factored into the estimate.

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  3. The COZEEP specified for this project by this estimate is designated for congestion relief as outline by DD-60-R2. The COZEEP required for other purposes should be included under other specifications.

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  4. Notification will be sent to the California Trucking Association and emergency services.

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  5. Whenever feasible close coordination with signal and ramp metering staff is critical and highly recommended to maximize the throughput within the closure area.

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  6. Traffic Control/Maintain Traffic Costs were not provided. Please consult with the OE or Construction office for this estimate.
- 

Note 1: As outlined in Deputy Directive 60-R2, this TMP is a living document, subject to change as required by changing circumstances. If there are material changes to the project scope which will affect the function or adequacy of the TMP, then change to the TMP must be addressed. If traffic conditions at the project site demonstrated that TMP elements need to be adjusted to adequately address congestion, then the TMP shall be altered accordingly.

Note 2: Hospitals with emergency services and fire stations that may require access through work zones at all hours should be accommodated. Schools, major venues, shopping malls, and other heavily utilized areas should also be notified of construction activities that may impact their services.

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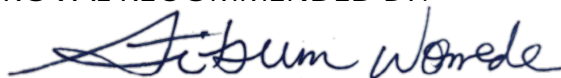
PREPARED BY:



DATE 7/30/2025

Prasanna Muthireddy  
(Project Engineer)

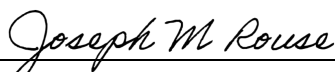
APPROVAL RECOMMENDED BY:



DATE 8/14/2025

Fitsum Worrede  
(Caltrans Project Manager)

APPROVED BY:



DATE 8/18/2025

Joe Rouse  
(Office of Highway Operations)

# TRANSPORTATION MANAGEMENT PLAN DATA SHEET

Alternative 2

For Consultant TMP Projects

PROJECT MANAGER: Liliana Price
PROJECT ENGINEER: Prasanna Muthireddy (925) 398-4855
DIST-EA: 04-1Q710 PROJ ID: 041800320 PROGRAM CATEGORY: 4B
PROJECT COMMON NAME: ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT
CO-RTE-PM: 04 - SM - 280 - .04
LEGAL DESCRIPTION: In San Mateo County, on Route Alpine Road between I-280 EB and I-280 WB.
<p>San Mateo County, in cooperation with the San Mateo County Transportation Authority (SMCTA) and Caltrans proposes the Alpine Road Corridor Improvement Project (project) located in San Mateo County at Alpine Road interchange on Interstate - 280 (I-280). The project proposes measures to improve multimodal access, mobility, circulation, and enhance safety along Alpine Road and at I-280 interchange. A Project location map is included as Attachment A.</p> <p>The full project extends from south of La Mesa Drive on Alpine Road to North of Stowe Lane on Alpine Road. However, this PSR-PDS encompasses the portion of the project that is within Caltrans right of way, between the I-280 southbound and northbound ramp intersections. The project is anticipated to include the following elements within Caltrans right of way:</p> <ul style="list-style-type: none"> <li>• Improve the existing intersection operations at I-280 ramps by replacing the existing side-street-stop control and all-way-stop control with either signals or roundabouts as the intersection control.</li> <li>• Replace free right turns at I-280 ramps with controlled and slow turning movements.</li> <li>• Improve existing bicycle and trail facilities where applicable to provide a continuous and low stress bicycle and pedestrian corridor.</li> <li>• Provide high-visibility crosswalks at intersections.</li> <li>• Install necessary signage and pavement markings to implement the above improvements.</li> </ul>
CONSTRUCTION COST ESTIMATE: \$18,318,000- \$23,127,000
PROJECT PHASE:      PIR <input checked="" type="checkbox"/> PR <input type="checkbox"/> PS&E <input type="checkbox"/> _____%

## Traffic Impact Descriptions

A) Does the proposed project includes long term closures ( > 24 hours)

Yes\_\_\_ No\_\_X\_

[If "No", Continue to Item D (Preliminary TMP Elements and Costs.). If "Yes", Check Applicable Facilities.]

- Freeway Lanes
- Freeway Shoulder
- Freeway Connectors
- Freeway Off-ramps
- Freeway On-ramps
- Local Streets
- Full Freeway Closures

B) Are there any construction strategies that can restore existing number of lanes?  
(Check Applicable Strategies)

- Temporary Roadway Widening Structure Involvement? Yes\_\_\_ No\_\_\_  
(If yes, notify Project Manager)
- Lane Restriping (Temporary Narrow Lane Widths) Yes\_\_\_ No\_\_\_
- Roadway Realignment (Detour Around Work Area)
- Median and/or Right Shoulder Utilization
- Use of an HOV lane as a Temporary Mixed Flow Lane
- Staging Alternatives (Explain Below)

Notes:

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C) Calculated Delays (To be performed if construction strategies in Item B do not mitigate congestion resulting from Item A)

1. Estimated Maximum Individual Vehicle Delay \_\_\_\_\_Minutes
2. Existing or Acceptable Individual Vehicle Delay \_\_\_\_\_Minutes
3. Estimated Individual Vehicle Delay Requiring Mitigation  
[(1) - (2)] \_\_\_\_\_Minutes
4. Estimated Delay Cost (Most Applicable)
  - Extended Weekend Closure \$ \_\_\_\_\_
  - Weekly (7 days) \$ \_\_\_\_\_
5. Estimated Duration of Project Related Delays \_\_\_\_\_
6. Cost of Construction Related Delays [(4 x 5)] \$ \_\_\_\_\_

D) Preliminary TMP Elements and Cost

1. Public Information
 

<input checked="" type="checkbox"/>	a. Brochures and Mailers	\$6,000
<input checked="" type="checkbox"/>	b. Press Release	\$4,000
<input type="checkbox"/>	c. Paid Advertising	\$ _____
<input type="checkbox"/>	d. Public Information Center/Kiosk	\$ _____
<input checked="" type="checkbox"/>	e. Public Meeting/Speakers Bureau	\$6,000
<input type="checkbox"/>	f. Telephone Hotline	\$ _____
<input checked="" type="checkbox"/>	g. Internet	\$4,000
<input checked="" type="checkbox"/>	h. Notification to impacted groups (Bicycle users, Pedestrians with disability, others.)	\$4,000
<input type="checkbox"/>	i. Others _____	\$ _____
<b>SUB TOTAL</b>		<b>\$24,000</b>

2. Motorists Information strategies		
<input type="checkbox"/>	a. Changeable Message Signs (Fixed)	\$ _____
<input checked="" type="checkbox"/>	b. Changeable Message Signs (Portable)	\$60,000
<input checked="" type="checkbox"/>	c. Ground Mounted Signs	\$10,000
<input type="checkbox"/>	d. Highway Advisory Radio	\$ _____
<input type="checkbox"/>	e. Caltrans Highway Information Network (CHIN)	\$ _____
<input type="checkbox"/>	f. Revised Transit Schedules/Maps	\$ _____
<input type="checkbox"/>	g. Others _____	\$ _____
SUB TOTAL		\$70,000

3. Incident Management		
<input checked="" type="checkbox"/>	a. Construction or Maintenance Zone Enhanced Enforcement Program (COZEEP or MAZEEP)	\$405,000
<input type="checkbox"/>	b. Freeway Service Patrol	\$ _____
<input type="checkbox"/>	c. Traffic Management Team	\$ _____
<input type="checkbox"/>	d. New CCTVs and Detectors	\$ _____
<input type="checkbox"/>	e. Others _____	\$ _____
SUB TOTAL		\$405,000

4. Construction Strategies (In Addition to Elements Identified on Item B)		
<input checked="" type="checkbox"/>	a. Off Peak/Night/Weekend Work (Lane Closure Charts)	\$81,000
<input type="checkbox"/>	b. Reversible Lanes	\$ _____
<input type="checkbox"/>	c. Total Facility Closure	\$ _____
<input type="checkbox"/>	d. Extended Weekend Closure	\$ _____
<input type="checkbox"/>	e. Truck Traffic Restrictions	\$ _____
<input checked="" type="checkbox"/>	f. Reduced Speed Zone	\$41,000
<input checked="" type="checkbox"/>	g. Connector and Ramp Closures	\$81,000
<input type="checkbox"/>	h. Incentive and Disincentive	\$ _____
<input type="checkbox"/>	i. Moveable Barrier	\$ _____
<input type="checkbox"/>	j. Others _____	\$ _____
SUB TOTAL		\$203,000

5. Demand Management		
<input type="checkbox"/>	a. HOV Lanes/Ramps (New or Convert)	\$ _____
<input type="checkbox"/>	b. Park and Ride Lots	\$ _____
<input type="checkbox"/>	c. Rideshare Incentives	\$ _____
<input type="checkbox"/>	d. Variable Work Hours	\$ _____
<input type="checkbox"/>	e. Telecommute	\$ _____
<input type="checkbox"/>	f. Ramp Metering (New Installation)	\$ _____
<input type="checkbox"/>	g. Ramp Metering (Maintain Existing)	\$ _____
<input type="checkbox"/>	h. Others _____	\$ _____
SUB TOTAL		\$0

6. Alternate Route Strategies
- a. Add Capacity to Freeway Connector \$ \_\_\_\_\_
  - b. Street Improvement \$ \_\_\_\_\_  
(widening, traffic signal, etc)
  - c. Traffic Control Officers \$ \_\_\_\_\_
  - d. Parking Restrictions \_\_\_\_\_
  - e. Others not used \$ \_\_\_\_\_

SUB TOTAL \$0

7. Other Strategies
- a. Application of New Technology \$ \_\_\_\_\_
  - b. Others not used \$ \_\_\_\_\_

SUB TOTAL \$0

8. The Project includes the following: (Check applicable type of facility closures)

- a. Highway or Freeway Lanes
- b. Highway or Freeway Shoulders
- c. Full Freeway Closure
- d. Freeway On/Off-Ramps
- e. Freeway Connectors
- f. Local Streets
- g. Prolonged Ramp Closures

9. Major operations requiring traffic control and working days for each

<u>Operation</u>	<u># of Working</u>	<u># of Traffic</u>
	<u>Days</u>	<u>Control Days</u>
<input type="checkbox"/> a. Clearing and Grubbing	18	1
<input type="checkbox"/> b. Existing Feature Removal	19	1
<input type="checkbox"/> c. Excavation of Embankments Construction	38	2
<input type="checkbox"/> d. Structural Section Construction	150	75
<input type="checkbox"/> e. Drainage Feature Construction	38	8
<input type="checkbox"/> f. Structures Construction	19	1
<input type="checkbox"/> g. MGS/Barrier Construction	38	27
<input type="checkbox"/> h. Striping	18	4
<input type="checkbox"/> i. Electrical Component Construction	19	14
<input type="checkbox"/> j. Other	18	2
Total days	375	135

TOTAL ESTIMATED COST OF TMP ELEMENTS = \$ 702,000

Notes :

Assumptions/ Comments:

Assumptions/ Comments:

- 
1. Entire project will take approximately 375 working days to construct.

---

  2. Current dollar values used. Inflation was not factored into the estimate.

---

  3. The COZEEP specified for this project by this estimate is designated for congestion relief as outline by DD-60-R2. The COZEEP required for other purposes should be included under other specifications.

---

  4. Notification will be sent to the California Trucking Association and emergency services.

---

  5. Whenever feasible close coordination with signal and ramp metering staff is critical and highly recommended to maximize the throughput within the closure area.

---

  6. Traffic Control/Maintain Traffic Costs were not provided. Please consult with the OE or Construction office for this estimate.
- 

Note 1: As outlined in Deputy Directive 60-R2, this TMP is a living document, subject to change as required by changing circumstances. If there are material changes to the project scope which will affect the function or adequacy of the TMP, then change to the TMP must be addressed. If traffic conditions at the project site demonstrated that TMP elements need to be adjusted to adequately address congestion, then the TMP shall be altered accordingly.

Note 2: Hospitals with emergency services and fire stations that may require access through work zones at all hours should be accommodated. Schools, major venues, shopping malls, and other heavily utilized areas should also be notified of construction activities that may impact their services.

---

PREPARED BY:



DATE 7/30/2025

Prasanna Muthireddy  
(Project Engineer)

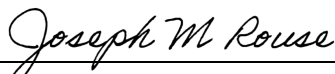
APPROVAL RECOMMENDED BY:



DATE 8/14/2025

Fitsum Worrede  
(Caltrans Project Manager)

APPROVED BY:



DATE 8/18/2025

Joe Rouse  
(Office of Highway Operations)

**Attachment K**  
**Storm Water Data Report**  
**(SWDR)**

## Long Form - Stormwater Data Report Template



Dist-County-Route: 04-SM-280

Post Mile Limits: PM 0.04

Type of Work: Roadway Improvement

Project ID (EA): 0418000320 (1Q710)

Phase:  PID       PA/ED       PS&E

Applicable Caltrans Post Construction Treatment Requirement:    2012     2022

Regional Water Quality Control Board(s): San Francisco Bay - Region 2

Total Disturbed Soil Area: 0.48 Alt 1, 1.06 Alt 2    PCTA: 0.48 Alt 1, 1.06 Alt 2 (to be confirmed in PSE)

Alternative Compliance (acres):    ATA 2 (50% Rule)?    Yes     No

Estimated Const. Start Date: 06/2029    Estimated Const. Completion Date: 06/2030

Risk Level:    RL 1     RL 2     RL 3     WPCP     Other: \_\_\_\_\_

Is (M)WEL0 applicable?    Yes     No  TBD IN PS&E

Is the Project within a TMDL watershed?    Yes     No

Does the project require trash treatment?    Yes     No

Notification of ADL reuse (if yes, provide date):    Yes     Date: \_\_\_\_\_    No   
TBD IN PSE


*This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the date upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E only.*

Prasanna Muthireddy, Registered Project Engineer/Landscape Architect    06/04/2025  
Date

**I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:**

   06/04/2025  
Fitsum Worrede, Caltrans Project Manager    Date

   06/10/2025  
Amrinder Jhajj, District Maintenance Stormwater    Date  
Coordinator

 Kimberly White, Designated Landscape Architect Representative	6/11/25 Date
 Demeke Tsige, District/Regional Design SW Coordinator of Designee	6/23/2025 Date

[Stamp Required at PS&E only]

## 1. Project Description

San Mateo County, in cooperation with the San Mateo County Transportation Authority (SMCTA) and Caltrans, proposes the Alpine Road Corridor Improvement Project (project) located in San Mateo County. The project proposes measures to improve multimodal access, mobility, circulation, and enhance safety along Alpine Road and at I-280 interchange.

The full project extends from south of La Mesa Drive on Alpine Road to North of Stowe Lane on Alpine Road. However, this Storm Water Data Report (SWDR) encompasses the portion of the project that is within Caltrans right of way, between I-280 southbound and northbound ramp intersections. The project is anticipated to include the following elements within Caltrans right of way:

- Improve the existing intersection operations at I-280 ramps by replacing the existing side-street-stop control and all-way-stop control with either signals or roundabouts as the intersection control.
- Replace large radius free right turns at I-280 ramps with smaller radius curb returns to allow for controlled and slow turning movements.
- Improve existing bicycle and trail facilities where applicable to provide a continuous and low stress bicycle and pedestrian corridor.
- Provide high-visibility crosswalks at intersections.
- Install necessary signage and pavement markings to implement the above improvements.

### Disturbed Soil Areas (DSA) and Impervious Areas

The DSA was calculated using AutoCAD Civil 3D. DSA calculations consider all areas where ground disturbance is anticipated, which include the Project’s proposed grading areas, added impervious areas, replaced impervious area, and removed impervious areas compared to the existing topography. Of the improvements identified, curb ramp reconstruction, median improvements, and sidewalk improvements will necessitate ground disturbance. Excluded impervious areas in the NIS include sidewalks and pedestrian ramps on existing roadways. Additional values as noted in the table below are calculated and defined as noted in the project planning and design guide for stormwater quality handbook by Caltrans. The summarized values are shown in Table 1.1.

*Table 1.1 DSA and Impervious Areas for Alpine Road Corridor Improvement Project – Alternative 1 (Caltrans R/W)*

Total Disturbed Soil Area (acres) - DSA	Net New Impervious (acres) - NNI	Replace Impervious Surface (acres) – RIS	Excluded Impervious Area (acres) – EIA	New Impervious Surface (acres) - NIS
0.48	0.15	0.00	0.08	0.08

Table 1.2 DSA and Impervious Areas for Alpine Road Corridor Improvement Project – Alternative 1 (Non Caltrans R/W)

Total Disturbed Soil Area (acres) - DSA	Net New Impervious (acres) - NNI	Replace Impervious Surface (acres) – RIS	Excluded Impervious Area (acres) – EIA	New Impervious Surface (acres) - NIS
0.67	0.25	0.00	0.07	0.18

Table 1.3 DSA and Impervious Areas for Alpine Road Corridor Improvement Project – Alternative 2 (Caltrans R/W)

Total Disturbed Soil Area (acres) - DSA	Net New Impervious (acres) - NNI	Replace Impervious Surface (acres) – RIS	Excluded Impervious Area (acres) – EIA	New Impervious Surface (acres) - NIS
1.06	0.31	0.00	0.09	0.22

Table 1.4 DSA and Impervious Areas for Alpine Road Corridor Improvement Project – Alternative 2 (Non Caltrans R/W)

Total Disturbed Soil Area (acres) - DSA	Net New Impervious (acres) - NNI	Replace Impervious Surface (acres) – RIS	Excluded Impervious Area (acres) – EIA	New Impervious Surface (acres) - NIS
1.25	0.49	0.00	0.25	0.24

### Post Construction Treatment Area (PCTA)

The project proposes two build alternatives and one no-build alternatives. Of the two build alternatives, Alternative 1 proposes signals and Alternative 2 proposes roundabouts at the I-280 ramp intersections within Caltrans right of way. The pre-project impervious area is 0.32 acres for Alternative 1 and 0.74 acres for Alternative 2, and the post-project impervious area is 0.48 acres for Alternative 1 and 1.06 acres for Alternative 2. The Net New Impervious (NNI) area is 0.15 acres for Alternative 1 and 0.31 acres for Alternative 2 and is not greater than the post-project impervious area. The DSA, NIS and PCTA values will be revised and finalized at the PA&ED and PS&E phase. The NIS is not greater than 10,000 square feet for the project locations within Caltrans R/W; therefore, treatment BMPs will not be required, according to the Caltrans Stormwater Quality Handbook.

There are not existing treatment BMPs located within the project limits.

## 2. Site Data and Stormwater Quality Design Issues

The Project is within Caltrans, San Mateo County, City of Menlo Park, and Town of Portola Valley right of way. The project is under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB), Region 2.

### Hydrologic Unit

According to the Caltrans' Water Quality Planning Tool (July, 2024), the Project area is within an undefined Hydrologic Sub Area (#205.50) of the Palo Alto Hydrologic Area and within the Santa Clara Hydrologic Unit, with the average annual precipitation of 31.13 inches.

Receiving Water Bodies

The Project’s receiving water bodies are San Francisquito Creek and Los Trancos Creek within the Saratoga Creek-Frontal San Francisco Bay Estuaries watershed, which discharge into San Francisco Bay, South. The Caltrans R/W portion of the project drains directly to Los Trancos Creek.

Beneficial Uses

The San Francisco Bay RWQCB’s Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) (March 2023) and Caltrans’ Water Quality Planning Tool have listed the beneficial uses. See Table 2.1 for summary.

Table 2.1 Listed Beneficial Uses of Receiving Waters

Water Body	Beneficial Uses																	
	COLD	MUN	RECI	REC2	SPWN	WARM	WILD	AGR	GWR	NAV	COMM	EST	IND	MIGR	RARE	FRSH	PROC	SHELL
San Francisquito Creek	E	-	E	E	E	E	E	-	-	-	-	-	-	E	E	-	-	-
Los Trancos Creek	E	-	E	E	E	E	E	-	-	-	-	-	-	E	E	-	-	-
San Francisco Bay, South	-	-	E	E	E	-	E	-	-	E	E	E	E	E	E	-	-	E

Source: San Francisco Bay RWQCB 2023

Notes:

- COLD - cold freshwater habitat
- MUN - municipal and domestic supply
- REC-1 - water contact recreation
- REC-2 - non-contact water recreation
- SPWN - fish spawning
- WARM - warm freshwater habitat
- WILD - wildlife habitat
- AGR - agricultural supply
- GWR - groundwater recharge
- NAV - navigation
- COMM - commercial and sports fishing
- EST - estuarine habitat
- IND - industrial service supply
- MIGR- fish migration
- RARE - preservation of rare and endangered species
- FRSH - freshwater replenishment
- PROC - industrial process supply
- SHELL - shellfish harvesting
- E - existing

Clean Water Act 303(d) List (2022-2022)

The RWQCB has listed San Francisco Bay, South as impaired water bodies for the pollutants as shown below in **Table 2.2**.

Table 2.2 Water Quality Impairments and TMDLs

Water Body	Pollutant	Potential Source	Status
San Francisquito Creek	Diazinon	Unknown	Being addressed with USEPA approved TMDL
	Sedimentation/Silt	Unknown	TMDL required
	Trash	Unknown	Being addressed with action other than TMDL
San Francisco Bay, South	Chlordane	Unknown	TMDL required
	DDT (Dichlorodiphenyltrichloroethane)	Unknown	TMDL required
	Dieldrin	Unknown	TMDL required
	Dioxin compounds (including 2,3,7,8-TCDD)	Unknown	TMDL required
	Furan Compounds	Unknown	TMDL required
	Invasive Species	Unknown	TMDL required
	Mercury	Unknown	Being addressed with USEPA approved TMDL
	PCBs (Polychlorinated biphenyls)	Unknown	Being addressed with USEPA approved TMDL
	PCBs (Polychlorinated biphenyls) (dioxin-like)	Unknown	Being addressed with USEPA approved TMDL
Selenium	Unknown	TMDL required	

#### Municipal or Domestic Water Supply Reservoirs

Based on the Caltrans District 4 Work Plan (2019), there are no Drinking Water Reservoirs in the project area.

#### Land use

The project is within rural and residential areas. South of the I-280 interchange, Alpine Road passes through the community of Ladera, which has medium density residential and commercial land uses west of Alpine Road. The north end of the project passes through the Stanford Hills residential community to the west and Stanford Golf Course to the east.

#### Topography

The project is located in San Mateo County, situated between the Town of Portola Valley, the City of Menlo Park, and Unincorporated San Mateo County.

#### 401 Water Quality Certification/404 Permit

The project falls under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB). No negotiated understandings or agreements with the RWQCB is available for this project at the present time; however, the project will comply with the latest

National Pollutant Discharge Elimination System (NPDES) Stormwater Permit for Construction. In accordance with Section 401 of the Clean Water Act, projects impacting waters of the U.S., including wetlands, require certification from the San Francisco Bay RWQCB. A Section 404 jurisdictional delineation (for wetlands) should be performed during PA&ED studies. If required during reassessment of conditions and evaluation of alternatives in the PA&ED phase of the project, the project will apply for a 404 Permit from the United States Army Corps of Engineers (USACE).

A focused Natural Environment Study will be prepared and the appropriate permits and permit applicability will be determined during the PA&ED or PS&E phases of the project.

#### Climate

The project lies within a region that has a mild Mediterranean climate. It is characterized by almost all the rainfall occurring between November and early April, and mild temperatures that are rarely below freezing during the winter and seldom exceed 100 degrees during the summer. Long term temperature and precipitation data are available from weatherspark.com. The hot season lasts for 4.4 months, from June 3 to October 17, with an average daily high temperature above 70°F. The hottest month of the year is August, with an average high of 73°F and low of 58°F. The cool season lasts for 2.3 months, from November 28 to February 8, with an average daily high temperature below 60°F. The coldest month of the year is January, with an average low of 44°F and high of 57°F.

The wetter season lasts 5.2 months, from November 3 to April 9, with a greater than 15% chance of a given day being a wet day. The month with the most wet days is February, with an average of 8.1 days with at least 0.04 inches of precipitation. The drier season lasts 6.8 months, from April 9 to November 3. The month with the fewest wet days is July, with an average of 0.1 days with at least 0.04 inches of precipitation.

#### Soils

A geotechnical report for this project is currently unavailable. Based on the Caltrans Storm Water Quality Planning Tool website the project soil type for both Caltrans ROW and the remaining corridor is designated as sandy clay loam and cut-and-fill urban land complex.

#### Slope Stability

In order to make sure the disturbed areas are stable, the project would apply permanent erosion control measures. Section 3 discusses the temporary stormwater BMPs to reduce or avoid the potential stormwater impacts. Also, section 6 discusses the permanent BMPs for stormwater pollution prevention and treatment within the project limit. Any existing treatment BMPs will be protected.

### 3. Risk Level Calculation

The R factor was determined from EPA calculator, K factor and LS factor were determined from the Caltrans Water Quality Planning Tool website. The R Factor is 57.32, K Factor within Caltrans ROW was determined to be 0.32 and 0.37 throughout the remaining project areas, LS factor for the northern half of the project (including Caltrans ROW) was determined to be 3.64 and 2.16 in the southern half. Once cross sections of the existing grade become available, detailed calculations to determine the project specific LS will be performed. The calculated product of these values is 4.6. Since this value is between 0 and 15, the project is classified as having a low sediment risk. See the Required Attachments for the sediment risk factor input values.

The receiving water risk is classified as high because the disturbed area discharges to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY.

The classification resulting from a combination of low sediment risk and high receiving water risk results in a Risk Level 2 for all portions of the project.

Location	R	K	LS	RxKxLS	Sediment Risk	Receiving Water Risk	Risk Level
Caltrans ROW	57.32	0.32	3.64	66.76	Med	High	2
San Mateo County	57.32	0.37	2.16	45.81	Med	High	2

#### 4. Construction Site BMPs to be used on Project

Since this project involves DSA, Construction Site BMPs will be required. According to the Caltrans “Trash Load Reduction Workplan for the San Francisco Bay Region”, the project site is in a Moderate Trash Generation Rating area; therefore, trash control devices will be required.

#### Storm Water Pollution Prevention Plan (SWPPP)

Less than one acre would be disturbed so the project would not need to prepare a SWPPP according to the Construction General Permit (CGP) requirements. If during the PA&ED phase, more than one acre is discovered to be disturbed, then a SWPPP would need to be prepared. The SWPPP would be prepared by the contractor and be approved by the Caltrans Resident Engineer before construction can begin. The SWPPP would need to describe the measures being taken by the contractor to comply with the CGP. It would also have the Construction Site Monitoring Program that presents procedures and methods relating to the visual monitoring and sampling and analysis plans based on the risk level for the project. During the PS&E phase, the lump sum cost for the SWPPP and other stormwater fees would be included in the Estimate Support Information of the Supplemental Attachments.

#### Construction Site BMP Strategy

The construction work for this project would take approximately one year to complete. Prior to the beginning of construction work, or as early as possible, construction site BMPs should be installed so that any potential sediment-laden or contaminated runoff or run-on can be avoided or minimized. Additionally, any measures that would be considered for the project would need to be detailed in the PS&E phase.

The following list contains the general construction site BMP strategy for this project, which are in accordance with the Caltrans’ Standard Specifications (2023):

- Tracking Control
- Soil Stabilization Measures
- Non-stormwater Management Measures
- Sediment Control Measures
- Stormwater Sampling and Analysis
- General Construction Site Management

There would be fiber rolls placed along areas where the existing on and off ramps are located since these activities would be earth disturbing. The intervals for the spacing of the rolls are

specified in the Caltrans Standard Specifications (Caltrans 2023).

As per Table 2.1 in the Caltrans Construction Site Best Management Practices Manual, construction site BMPs that may be considered include temporary soil stabilization, temporary sediment control, tracking control, and non stormwater management.

Measures for tracking control would be used to limit the number of sediments and debris from being picked up onto Alpine Rd and the I-280 on- and off-ramps, which would lead to other local roads and the surrounding area. The sediment from off-site locations would be limited by placing stabilized construction entrances, which would be combined with street sweeping and vacuuming.

The construction activities would also generate concrete, hot mix asphalt, and slurry waste, so there would be temporary concrete washouts. Implementation of the concrete waste management would comply with the Caltrans Standard Specifications (2023).

Spill prevention and control, material management, waste management, and non- stormwater management are all included in the construction site management. Throughout the duration of the project job site management would be used to protect the water quality.

Materials handling, various waste management, and other housekeeping BMPs would also be used during the duration of the project. All anticipated stockpiles will be maintained with the appropriate BMPs. Locations and details to reduce and prevent trash from entering the storm drain inlets will be identified in the PS&E phase. The percentage of cost to the project due to construction site BMPs is estimated using the baseline cost percentage of 3% from Table F-2 in the PPDG.

### Maintenance BMPs

In areas accessible to pedestrians and bicyclists, drainage inlets would need to be marked. All inlets within the ROW of Caltrans and San Mateo County would need to have the Caltrans standard drainage inlet marker, or standard drainage inlet markers within other jurisdictions respectively.

## 5. Other Water Quality Requirements and Agreements

The project falls under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB). No negotiated understandings or agreements with the RWQCB are available for this project at the present time.

## 6. Permanent BMPs

Permanent BMPs are used to minimize and/or avoid water quality impacts in the post-construction condition. These permanent BMPs include the design pollution prevention (DPP) and treatment BMP strategies. The lump sum for all permanent BMPs is included in the Planning Cost Estimates for each alternative and would need to be separated into individual items during the PS&E phase. All proposed slopes must be 4:1 or flatter, and any slope exceeding 2:1 will require geotechnical recommendations.

### Design Pollution Prevention (DPP) BMP Strategy

The project does not have add a net increase of one acre or more of new impervious surface, and, if so, will not require consideration of permanent storm water treatment and hydromodification management measures.

Sediment control or pollution prevention BMPs are to be installed to mitigate potential velocity increases, stabilize slopes, and minimize potential for erosion. Mitigation measures may include culverts with velocity dissipation devices, hydroseeding and fiber rolls. BMP details will be part of the project's final design. The project will protect existing vegetation to the maximum extent feasible.

#### Slope/Surface Protection Systems

To have slope stabilization within the project, replacement landscaping and vegetation would be installed wherever existing landscaping is disturbed. Specific details on the vegetation plus the need for a Model Water Efficient Landscape Ordinance worksheet would be provided in the PS&E phase. Permanent erosion control measures such as hydroseeding and fiber rolls are anticipated to be utilized on all new and disturbed fill and cut slopes that are unpaved. Implementation of permanent erosion control measures will be developed during the PS&E phase.

#### Concentrated Flow Conveyance Systems

Bioretention devices and storm drains are considered for the whole project. To implement them into the project, the existing roadway drainage system would be modified or replaced to fit with the new system. Modifications to the existing system would most likely result in the change of surface runoff. There will be a conceptual drainage improvement shown in the Drainage Impact Study Report, which would be prepared in the PS&E phase.

#### Preservation of Existing Vegetation

The project intends to protect existing vegetation to the maximum extent practicable. Impacted existing vegetation consists primarily of landscaped trees, shrubs, or ground cover. Clearing and grubbing will be required for this project. Any existing wetlands or other environmentally sensitive areas would be protected and preserved using temporary high-visibility fencing. These locations would be identified during the PS&E phase. Measures for preservation such as temporary high-visibility fencing and pruning existing vegetation will be considered during the design phase.

### Treatment BMP Strategy

The project is not required to implement treatment BMPs as concluded by the Evaluation Documentation Form (EDF) of the July 2023 PPDG. However, the project will consider opportunities for permanent BMPs during the PS&E phase and add them to the project if feasible.

#### Biofiltration Swales/Strips

Bioretention swales/strips will be considered for this project. If warranted, design of these devices will be developed during the PA&ED and/or PS&E phase of the project.

#### Dry Weather Diversion

Dry weather diversion will not be considered for the project because non-storm water flow is not anticipated from the project site during dry season.

#### Infiltration Devices

Use of infiltration devices will be evaluated and implemented as appropriate during the PA&ED and/or PS&E phase of the project.

#### Detention Devices

Use of detention devices will be evaluated and implemented as appropriate during the PA&ED and/or PS&E phase of the project.

#### Trash Capture Devices

The northbound ramps of I-280 within Caltrans ROW have a Moderate Trash Generating Rating according to the Caltrans District 4 Regional Board Trash Generation Map (see Attachment). Therefore, trash capture devices will be evaluated as part of this project.

#### Traction Sand Traps

Traction sand traps will not be considered for this project because the project site is not located in a snow region where sand traction is present.

#### Media Filters

Implementation of media filters will be evaluated during the PA&ED phase and/or PS&E phase. Project constraints for constructing detention devices include right-of-way.

#### Multi-Chambered Treatment Trains (MCTTs)

MCTTs may not be considered for the project because the project is constrained with right-of-way and cannot accommodate the MCTTs. It will be evaluated and implemented as appropriate during the PA&ED and/or PS&E phase.

### Attachments

- Vicinity Map
- Project Alternative Exhibits
- Evaluation Documentation Form (EDF)
- Risk Level Determination Documentation

### Supplemental Attachments

**Note: Supplemental Attachments are to be supplied during the SWDR approval process when requested; where noted, some of these items may only be requested on a project-specific basis.**

- Checklist SW-1, Site Data Sources (see E-14, 6.4.3.1)
- Checklist T-1, Part 1 (Treatment BMPs), if applicable (see E-15)
- Estimate Support Information for Construction Site, DPP, and/or Treatment BMPs, electronic copies accepted (Costs are for Caltrans internal use only)
- Calculations and supporting information for sizing Treatment BMPs or DPP BMPs or claiming post construction treatment for Alternative Compliance (contact the District/Regional NPDES Coordinator for expected method of documentation), if applicable
- Plans showing BMP deployment (e.g., Layout Sheets, Drainage Sheets, Water Pollution Control Sheets) (if requested by District/Regional Design Stormwater Coordinator), if applicable
- Method Demonstration Form (if prepared) (see 6.4.7.4)

- Documentation of Rapid Stability Assessment findings, including any higher level evaluation, if required (see 1.4.2.1)
- Locally required WELO calculations and forms or MWELo Excel Worksheet, if applicable (see 6.4.7.5)
- Checklist SW-2, Stormwater Quality Issues Summary (see 6.4.3.1)
- Checklist SW-3, Measures for Avoiding or Reducing Potential Stormwater Impacts (see 6.4.3.1)
- Checklist DPP-1, Parts 1–5 (Design Pollution Prevention BMPs) (see Appendix A)
- Checklist T-1, Part 2–11 (Treatment BMPs) (see Appendix B)
- Construction Site BMP Consideration Form (see Appendix C)
- Checklist CS-1, Parts 1–6 (Construction Site BMPs) (see Appendix C)

# ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT



VICINITY MAP

**LEGEND**

- CALTRANS R/W
- COUNTY R/W
- EXISTING CLASS II BIKE LANE
- PROPOSED TRAIL CONNECTION
- PROPOSED CLASS IV BIKEWAY
- STRIPING
- PROPOSED TRAFFIC SIGNAL
- PROPOSED RRFB OR HAWK CROSSING TREATMENT

**"AL" LINE CURVE DATA**

No.	R	Δ	T	L	N-COORDINATE	E-COORDINATE
3a	850.00'	6°44'26"	327.92'	267.78'	1975348.98	6069372.58
3b	1238.00'	4°37'41"	392.33'	426.09'	1975348.98	6069372.58
4	2050.55'	2°47'38"	92.95'	185.77'	1976557.53	6069570.55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	280	.04		

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_

PLANS APPROVAL DATE \_\_\_\_\_

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

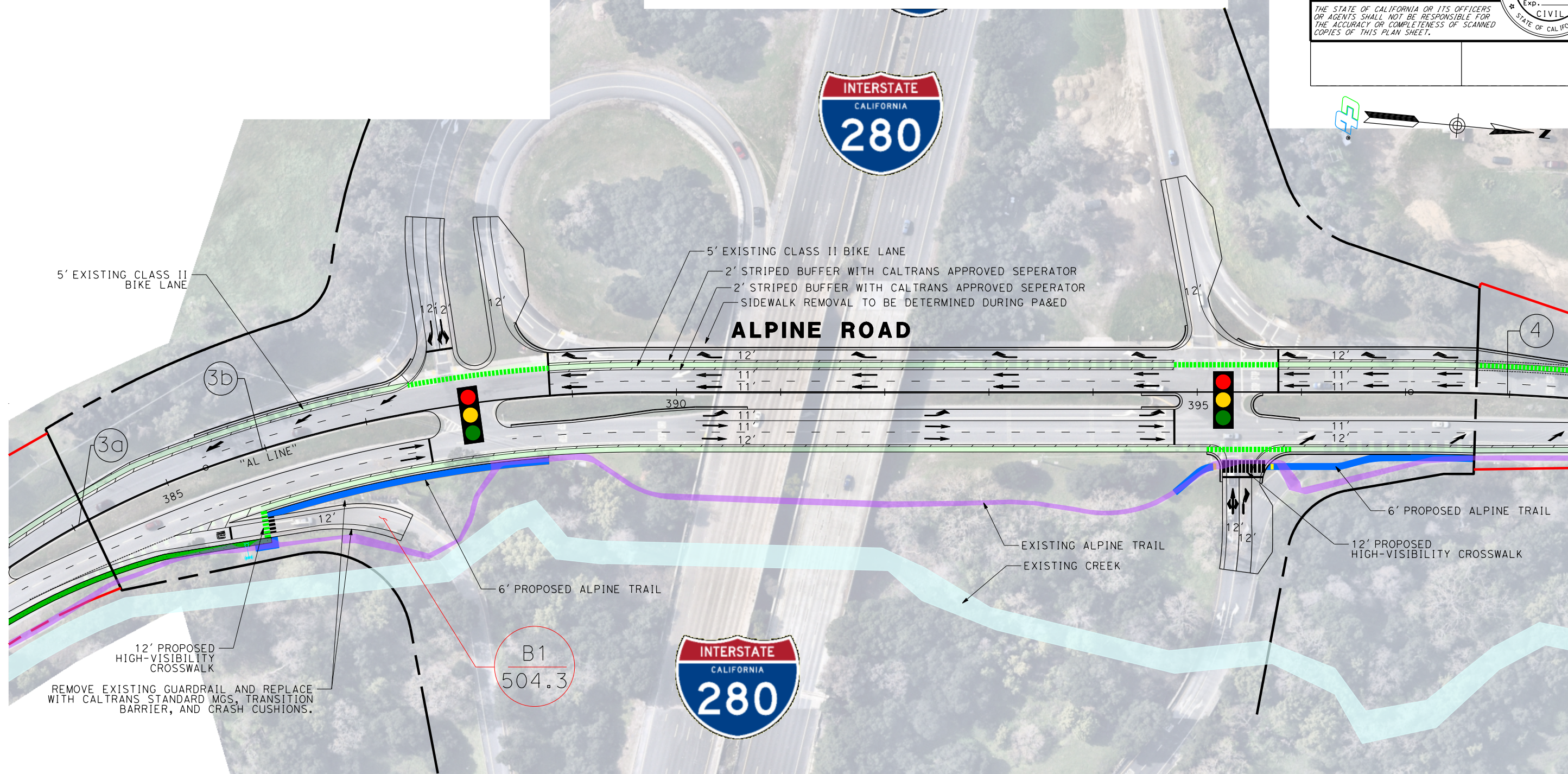
REGISTERED PROFESSIONAL ENGINEER

No. \_\_\_\_\_

Exp. \_\_\_\_\_

CIVIL

STATE OF CALIFORNIA



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 CONSULTANT FUNCTIONAL SUPERVISOR  
 CALCULATED-DESIGNED BY  
 CHECKED BY  
 REVISOR BY  
 DATE REVISOR  
 USERNAME => \$USER  
 DGN FILE => \$REQUEST

**PRELIMINARY**  
 NOT FOR CONSTRUCTION

ALPINE ROAD CORRIDOR  
 IMPROVEMENT PROJECT  
 ALTERNATIVE 1  
 IMPROVEMENTS INSIDE  
 CALTRANS RIGHT OF WAY  
 LAYOUT

EA 10710  
 DATE 07/11/2025  
 SCALE 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REVISOR: [ ] REVISION: [ ]

CHECKED BY: [ ]

DESIGNED BY: [ ]

FUNCTIONAL SUPERVISOR: [ ]

DATE: [ ]

**LEGEND**

	CALTRANS R/W		COUNTY R/W
	PROPOSED TRAIL CONNECTION		PROPOSED TRUCK APRON
	PROPOSED CLASS IV BIKEWAY		PROPOSED RRFB OR HAWK CROSSING TREATMENT

**"AL" LINE CURVE DATA**

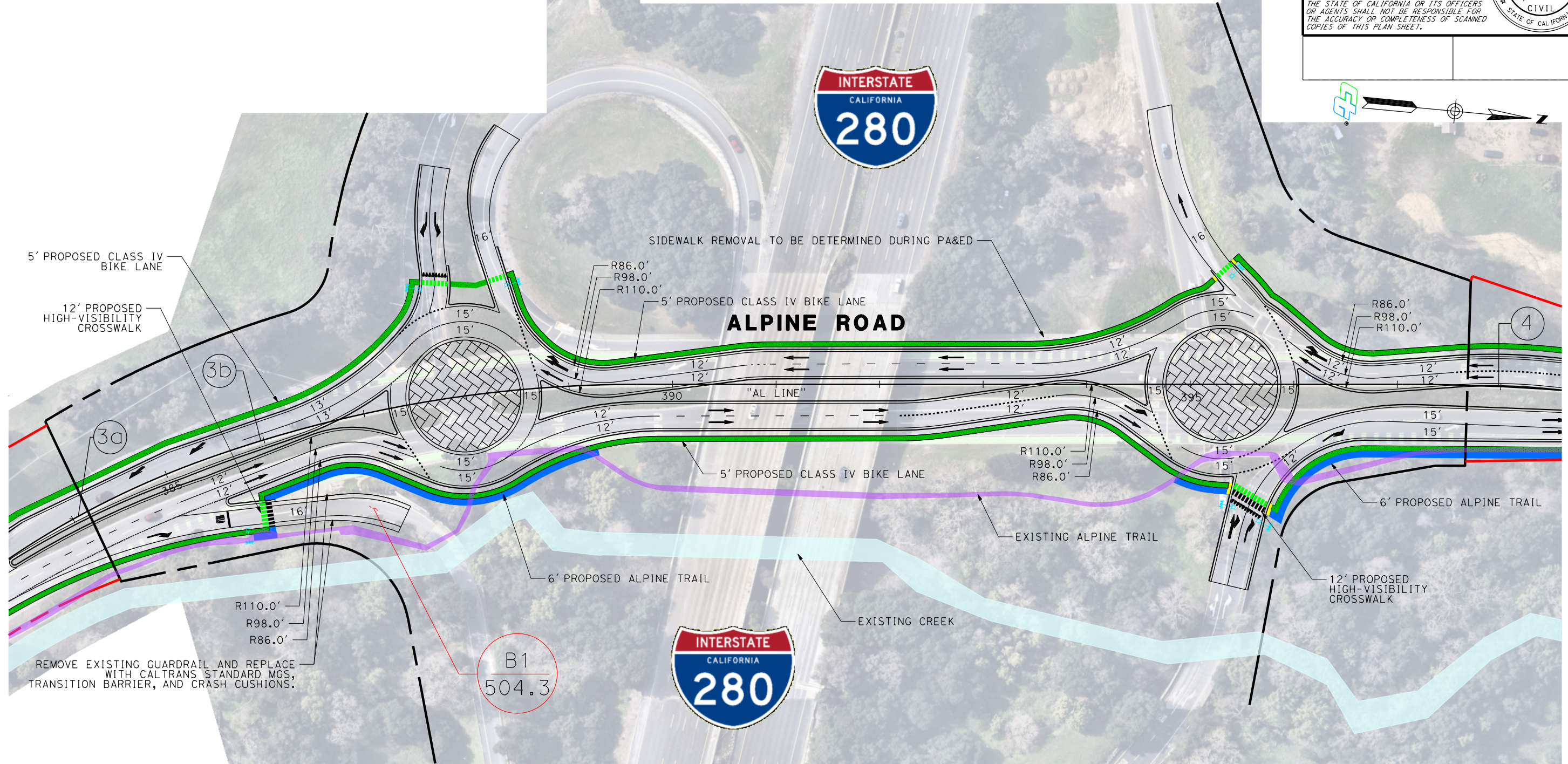
No.	R	Δ	T	L	N-COORDINATE	E-COORDINATE
3a	850.00'	6°44'26"	327.92'	267.78'	1975348.98	6069372.58
3b	1238.00'	4°37'41"	392.33'	426.09'	1975348.98	6069372.58
4	2050.55'	2°47'38"	92.95'	185.77'	1976557.53	6069570.55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	280	.04		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



**PRELIMINARY**  
NOT FOR CONSTRUCTION

**ALPINE ROAD CORRIDOR IMPROVEMENT PROJECT ALTERNATIVE 2 IMPROVEMENTS INSIDE CALTRANS RIGHT OF WAY LAYOUT**

EA 10710  
DATE 07/11/2025  
SCALE 1" = 50'

LAST REVISION DATE PLOTTED => #DATE 00-00-00 TIME PLOTTED => \$TIME

## Evaluation Documentation Form


No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation
1.	Begin Project evaluation regarding requirement for implementation of Treatment BMPs	✓		Continue to 2.
2.	Is the scope of the Project to install Treatment BMPs (e.g., Alternative Compliance or TMDL requirement)?		✓	If <b>Yes</b> , go to 8. If <b>No</b> , continue to 3.
3.	Is there a direct or indirect discharge to surface waters?	✓		If <b>Yes</b> , continue to 4. If <b>No</b> , go to 9.
4.	As defined in the WOAR or ED, does the project:		✓	If <b>Yes to any</b> , contact the District/Regional Design Stormwater Coordinator or District/Regional NPDES Coordinator to discuss the Department's obligations, go to 8 or 5. DT _____ (Dist./Reg. Coordinator initials)  If <b>No</b> to all, continue to 5.
	a. discharge to Areas of Special Biological Significance (ASBS), or			
	b. discharge to a TMDL watershed where Caltrans is named stakeholder, or	✓		
	c. have other pollution control requirements for surface waters within the project limits (e.g. STGA)?		✓	
5.	Are any existing Treatment BMPs partially or completely removed? (ATA Condition 1, Section 4.3.1)		✓	If <b>Yes</b> , go to 8 <b>AND</b> continue to 6. If <b>No</b> , continue to 6.
6.	Is this a Routine Maintenance Project?		✓	If <b>Yes</b> , go to 9. If <b>No</b> , continue to 7.
7.	Does the project result in an increase of <u>10,000 ft<sup>2</sup> or more</u> of new impervious surface (NIS)?		✓	If <b>Yes</b> , go to 8.  If <b>No</b> , go to 9.
8.	Project is required to implement Treatment BMPs.	Complete Checklist T-1, Part 1.		
9.	Project is not required to implement Treatment BMPs. DT _____ (Dist./Reg. Design SW Coord. Initials) PM _____ (Project Engineer Initials) 06 / 23 / 25 (Date)	Document for Project Files by completing this form and attaching it to the SWDR.		


Sediment Risk Factor Worksheet		Entry
<b>A) R Factor</b>		
<p>Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.</p> <p><a href="http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm">http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm</a></p>		
<b>R Factor Value</b>		57.32
<b>B) K Factor (weighted average, by area, for all site soils)</b>		
<p>The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.</p> <p><a href="#">Site-specific K factor guidance</a></p>		
<b>K Factor Value</b>		0.32
<b>C) LS Factor (weighted average, by area, for all slopes)</b>		
<p>The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.</p> <p><a href="#">LS Table</a></p>		
<b>LS Factor Value</b>		3.64
<b>Watershed Erosion Estimate (=RxKxLS) in tons/acre</b>		66.766336
<b>Site Sediment Risk Factor</b>		<b>Medium</b>
Low Sediment Risk: < 15 tons/acre		
Medium Sediment Risk: >=15 and <75 tons/acre		
High Sediment Risk: >= 75 tons/acre		

Receiving Water (RW) Risk Factor Worksheet		Entry	Score
<b>A. Watershed Characteristics</b>		yes/no	
A.1. Does the disturbed area discharge (either directly or indirectly) to a <b>303(d)-listed waterbody impaired by sediment</b> (For help with impaired waterbodies please visit the link below) or has a <b>USEPA approved TMDL implementation plan for sediment</b> ?: <a href="http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml">http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml</a> <b>OR</b>		yes	High
A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY? (For help please review the appropriate Regional Board Basin Plan) <a href="http://www.waterboards.ca.gov/waterboards_map.shtml">http://www.waterboards.ca.gov/waterboards_map.shtml</a>			

Combined Risk Level Matrix				
		Sediment Risk		
		Low	Medium	High
Receiving Water Risk	Low	Level 1	Level 2	
	High	Level 2		Level 3
Project Sediment Risk:		Medium		
Project RW Risk:		High		
Project Combined Risk:		Level 2		

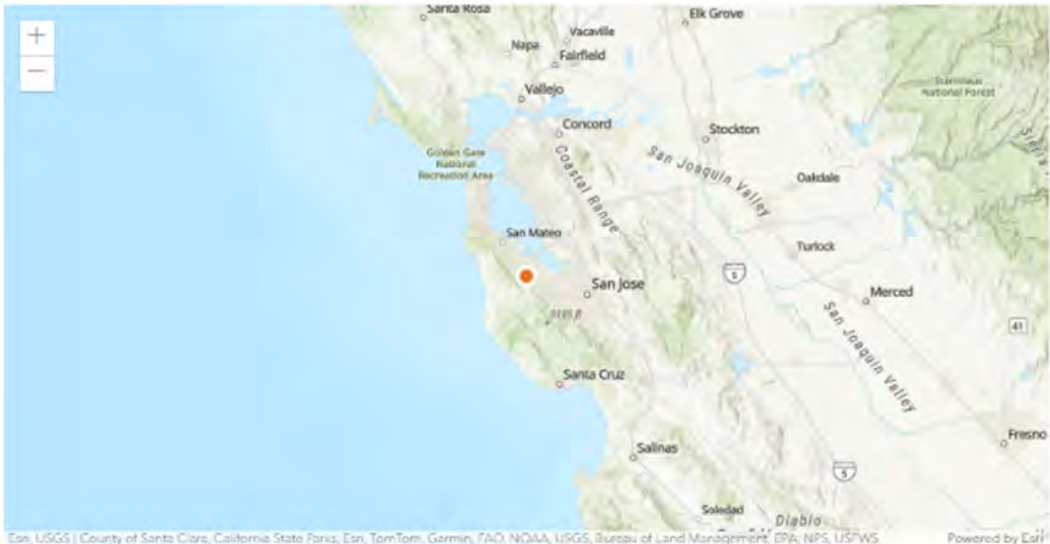
**1** Select the estimated start and end dates of construction by clicking the calendar icons below and using the dropdown calendar. The period of construction activity begins at initial earth disturbance and ends with final stabilization.

**Start Date:**  

**End Date:**  

**2** Locate your small construction project by entering the address in the search box or by clicking on the map.

**Location:**



**3** Click the "Calculate R Factor" button below.

**Facility Information**

<b>Start Date:</b> 05/03/2027	<b>Latitude:</b> 37.4092
<b>End Date:</b> 05/03/2029	<b>Longitude:</b> -122.1948

**Calculation Results**

Rainfall erosivity factor (R Factor) = **57.32**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

You do NOT qualify for a waiver from NPDES permitting requirements and must seek Construction General Permit (CGP) coverage. If you are located in an [area where EPA is the permitting authority \(pdf\)](#), you must submit a Notice of Intent (NOI) through the [NPDES eReporting Tool \(NeT\)](#). Otherwise, you must seek coverage under your state's CGP.

Figure 1: EPA – R Factor Calculation

### Caltrans Water Quality Planning Tool

The Water Quality Planning Tool was created to help planners and designers comply with environmental permits. It uses a map interface to find information based on a project's location. This application is being updated for digital accessibility and will continue to function while updates are in progress.

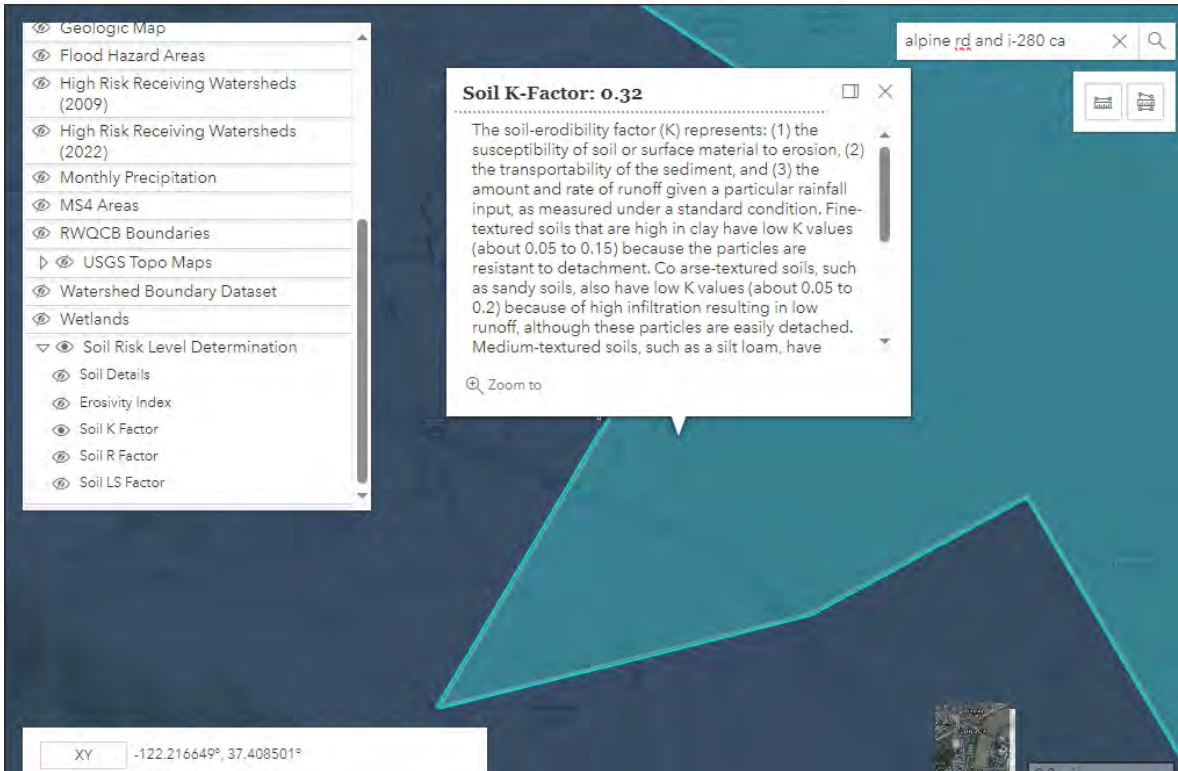


Figure 2: Soil K-Factor

### Caltrans Water Quality Planning Tool

The Water Quality Planning Tool was created to help planners and designers comply with environmental permits. It uses a map interface to find information based on a project's location. This application is being updated for digital accessibility and will continue to function while updates are in progress.

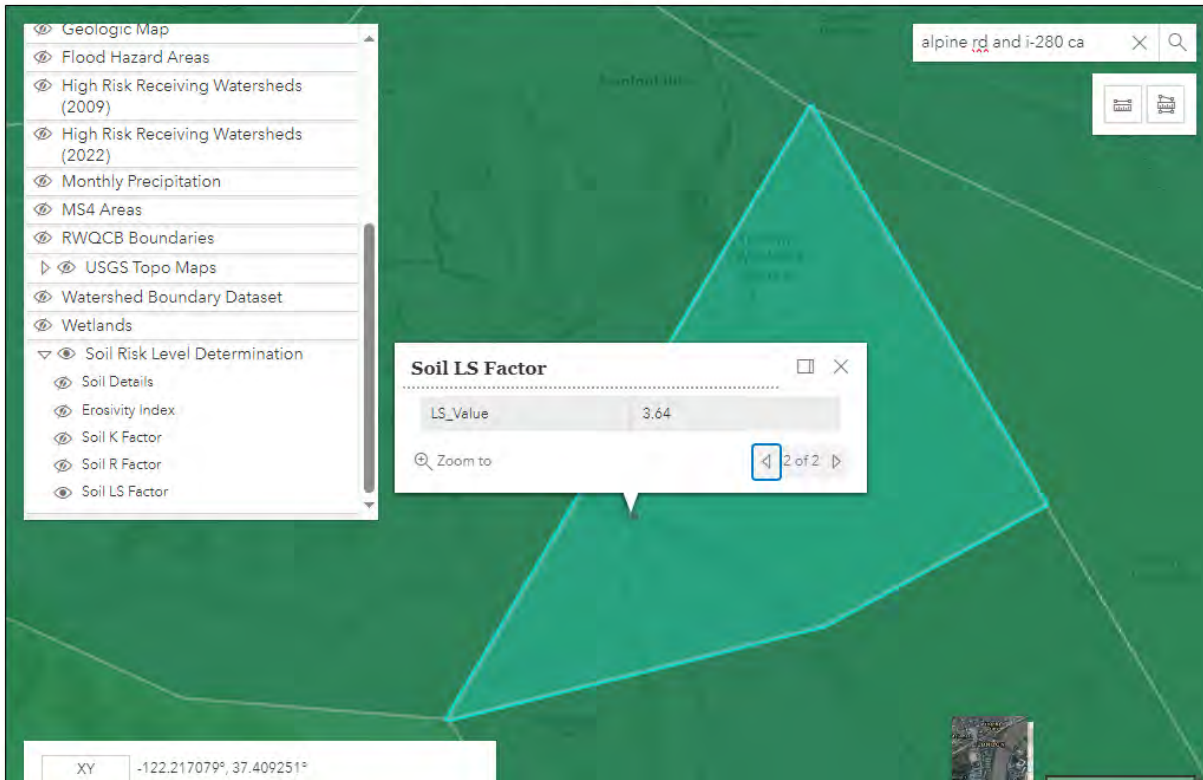


Figure 3: Soil LS Factor

04 – SM - 280 – PM 0.04  
EA 1Q710  
Project No. 0418000320  
August 2025

# **Attachment L**

## **Existing Utilities Exhibit**





# **Attachment M**

## **Right-of-Way Data Sheet**

**RIGHT OF WAY DATA SHEET FOR LOCAL PUBLIC AGENCIES**

(Form #)

EXHIBIT  
17-EX-21 (NEW 11/2019)  
Page 1 of 7

To: District Office Chief  
R/W Local Programs

Date: June 24<sup>th</sup>, 2025

Attention: District Branch Chief  
Local Programs

Co. SM Rte. 280 P.M. PM 0.04  
Expenditure Authorization 1Q710  
Project ID: 0418000320

Subject: RIGHT OF WAY DATA SHEET - LOCAL PROGRAMS

Project Description: The Alpine Road Corridor Improvement Project – Alternative 1

The California Department of Transportation (Caltrans), in cooperation with the San Mateo County Transportation Authority (SMCTA) and San Mateo County proposes the Alpine Road Corridor Improvement Project (project) located in San Mateo County at Alpine Road interchange on Interstate – 280 (I-280) at post mile (PM) 0.04. The project proposes measures to improve multimodal access, mobility, circulation, and enhance safety along Alpine Road and at I-280 interchange. A Project location map is included as Attachment A of the PSR-PDS.

The full project extends from West of La Mesa Drive on Alpine Road to East of Stowe Lane on Alpine Road. However, this PSR-PDS encompasses the portion of the project that is within Caltrans right of way, between the I-280 southbound and northbound ramp intersections. The project is anticipated to include the following elements within Caltrans right of way:

- Improve the existing intersection operations at I-280 ramps by replacing the existing side-street stop control and all-way-stop control with either signals or roundabouts as the intersection control.
- Replace large radius free right turns at I-280 ramps with smaller radius curb returns to allow for controlled and slow turning movements.
- Improve existing bicycle and trail facilities where applicable to provide a continuous and low stress bicycle and pedestrian corridor.
- Provide high-visibility crosswalks at intersections.
- Install necessary signage and pavement markings to implement the above improvements.

Right of way necessary for the subject project will be the responsibility of San Mateo County Transportation Authority.

The information in this data sheet was developed by Associated Right of Way Services, Inc. (AR/WS) and Kimley-Horn and Associates, Inc.

I. Right of Way Engineering

What level of Right of Way Engineering be required for this project?

Minimal (Requires Right of Way Retracement Narrative)

- No fee or easement acquisitions are required for the project; AND
- No excess lands will be created by the project; AND
- No Temporary Construction Easements (TCEs) are required for the project; AND

- No retaining walls, sound walls, footings, signs, traffic signals, or similar improvements will be constructed within ten feet of the existing right of way line.

  x   Minor (Requires Land Net, and PS&E Project Control sheets)

- No fee or easement acquisitions are required for the project; AND
- No excess lands will be created by the project; AND one or both of the following:
- Temporary Construction Easements (TCEs) are required for the project;
- Improvements will be constructed within ten feet of the existing right of way line.

   Moderate (Requires Land Net, PS&E Project Control sheets, Base Map & Appraisal Map)

- At least one fee and/or easement (except TCEs) acquisition is required for the project; AND
- No excess lands will be created by the project; AND
- No parcels will be transferred to the State.

   Major (Requires full compliance with Right of Way Manual and Local Public Agency Coordination (LPAC) Guidelines including, but not limited to, pre-design Record of Survey, Base Map, Appraisal Map, legal descriptions and deeds, property transfer documents, JUAs/CCUAs, Record Map, monuments, and one or more Record of Surveys)

- One or more fee and/or easement parcels will be transferred to the State; AND/OR
- Excess lands will be created by the project.

II. Engineering Surveys

Is any surveying or photogrammetric mapping required?

   No (Provide an explanation in Remarks Section XIII)

  x   Yes (Complete the following)

Datum Requirements

1. The units for this project are

  x   U. S. Survey Feet;

   Metric (Provide an explanation in Remarks Section XIII)

2. The horizontal datum for this project is

  x   California Coordinate System of 1983 (NAD 83 (1992), Epoch 2017.50);

   California Coordinate System of 1983 (NAD 83 (\_\_\_\_)), Epoch \_\_\_\_\_)  
(Provide Datum Tag and Epoch);

   Other (Provide an explanation in Remarks Section XIII)

3. The vertical datum for this project is

X  North American Vertical Datum of 1988 (NAVD 88);

National Geodetic Vertical Datum of 1927 (NGVD 27) (Provide explanation).

Other (Provide explanation ).

III. Parcel Information (Land and Improvements)

Are there any property rights required within the proposed project limits?

No   Yes  X  (Complete the following)

Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc.)

At the interchange where the project is in Caltrans right of way, all improvements are within existing R/W limits. No parcels to be acquired in the State's name.

Proposed temporary construction easements (TCE) from two corner commercial properties in County right of way, same owner, for traffic signalization purposes. Both TCE's require less than 20 square feet.

Both TCE's are to be acquired by San Mateo County and remain in the County's vesting.

Right of Way Cost Estimate:

	Current Value	Escalation Rate	Escalated Value
A. Acquisition, including Excess Lands, Damages, Private Utilities and Goodwill	<u> \$1,700 </u>	<u> 5 % </u>	<u> \$2,000 </u>
B. Environmental Mitigation	<u> </u>	<u> % </u>	<u> </u>
C. Grantor's Appraisal Cost	<u> \$10,000 </u>	<u> NA </u>	<u> \$10,000 </u>
D. Utility Relocation - Project Liability (from Section VII)	<u> \$30,000 </u>	<u> % </u>	<u> \$30,000 </u>
E. Relocation Assistance	<u> \$0 </u>	<u> </u>	<u> \$0 </u>
F. Clearance Demolition	<u> </u>	<u> % </u>	<u> </u>
G. Title and Escrow Fees	<u> \$2,000 </u>	<u> % </u>	<u> \$2,000 </u>
<b><u>TOTAL ESCALATED VALUE</u></b>			<u> \$44,000 </u>

Railroad Construction Costs  
(flagger, track work etc)

\_\_\_\_\_

(These are construction costs to be included in PS&E)

Construction Contract Work

\_\_\_\_\_

(These are construction costs to be included in PS&E)

TOTAL PARCEL COUNT

\_\_\_\_\_ 2

IV. Dedications

Are there any property rights which have been acquired, or anticipate will be acquired, through the "dedication" process for the Project?

No X Yes \_\_\_\_\_ (Complete the following)

Number of dedicated parcels \_\_\_\_\_

Have the dedication parcel(s) been accepted by the municipality involved?

No \_\_\_\_\_ Yes \_\_\_\_\_

V. Excess Lands / Relinquishments

Are there Caltrans property rights which may become excess lands or potential relinquishment areas?

No X Yes \_\_\_\_\_ (Provide an explanation in Remarks Section XIII)

VI. Relocation Information

Are there relocations anticipated? YES \_\_\_\_\_ NO X  
(If yes, provide the following information)

No. of personal property relocations \_\_\_\_\_

No. of single family \_\_\_\_\_ No. of business/non profit \_\_\_\_\_

No. of multi-family \_\_\_\_\_ No. of farms \_\_\_\_\_

Based on Draft/Final (circle one) Relocation Impact Statement/Study (circle one) - Dated \_\_\_\_\_, it is anticipated that sufficient replacement housing will/will (circle one) not be available without Last Resort Housing.

VII. Utility Relocation Information

Do you anticipate any utility facilities or utility rights of way to be affected?

No \_\_\_\_\_ Yes X (Complete the following.)

Facility	Owner	Estimated Relocation Expense		
		State Obligation	Local Obligation	Utility Owner Obligation
A. OH Utility Pole (3)	PG&E	\$	\$	\$50,000
B. Storm, Sewer, and Water adjustments	County	\$	\$30,000	\$
C.		\$	\$	\$
D.		\$	\$	\$
E.		\$	\$	\$
F.		\$	\$	\$
Totals		\$	\$30,000	\$50,000
Number of facilities				

\*This amount reflects the estimated total financial obligation by the State.

The following checked items may seriously impact lead time for utility relocation:

- Longitudinal policy conflict(s)
- Environmental concerns impacting acquisition of potential easements
- Power lines operating in excess of 50 KV and substations

VIII. Rail Information

Are railroad facilities or railroad rights of way affected?

No  X  Yes   (Complete the following)

Describe railroad facilities or railroad rights of way affected.

Owner's Name	Transverse Crossing	Longitudinal Encroachment
A.		
B.		

Discuss types of agreements and rights required from the railroads. Are grade crossings requiring services contracts, or grade separations requiring construction and maintenance agreements involved?

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IX. Clearance Information

Are there improvements that require clearance?

No  X  Yes   (Complete the following)

A. Number of Structures to be demolished

B. Estimated Cost of Demolition \$

C. If there is demolition and clearance, will it be done prior to construction or as part of the construction contract?

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X. Hazardous Materials/Waste

Are there any sites and/or improvements in the Project Limits that are known to contain hazardous waste/materials?

None  X  Yes   (Explain in the Remarks Section XIII)

Are there any sites and/or improvements in the Project Limits that are suspected to contain hazardous waste/materials?

None   Yes  X  (Explain in the Remarks Section XIII)

XI. Project Scheduling Completion Dates

Proposed completion of Appraisal maps and legal descriptions, if needed	<u>January 2029</u>
Proposed Environmental Clearance	<u>March 2027</u>
Proposed R/W Certification	<u>April 2029</u>
Proposed Ready to List (RTL)	<u>May 2029</u>
Proposed Construction Award	<u>July 2029</u>

XII. Proposed Funding

	Local	State	Federal	Other
Acquisition*	<u>\$14,000</u>	<u>\$</u>	<u>\$</u>	<u>\$</u>
Utilities	<u>\$30,000</u>	<u>\$</u>	<u>\$</u>	<u>\$50,000</u>
Relocation Assistance Program	<u>\$0</u>	<u>\$</u>	<u>\$</u>	<u>\$</u>
R/W Support Costs	<u>\$49,000</u>	<u>\$</u>	<u>\$</u>	<u>\$</u>

\*Includes cost identified in Section III.A.(Acquisition), C. (Grantor's Appraisal Cost), & G. (Title and Escrow Fees).

XIII. Remarks

Section III Parcel Information (Land and Improvements) – Right of Way Estimate – A:  
Includes a 25% contingency factor to address, in part, damages, loss of business goodwill claims, limited administrative settlements, and other unknown potential impacts. An annual 5% Escalation Rate was applied to the Acquisitions covering a three-year period.  
The soil next to the ramps could potentially have lead concentrations. Hazardous material investigation will be completed in the PA&ED phase.

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Project Sponsor Consultant

Project Sponsor

R/W Professional (ie: qualified consultant or agency)

Prepared by:

Reviewed and Approved by:

Reviewed and Approved by:



Prasanna Muthireddy  
Kimley-Horn and Associates, Inc.

Liliana Price  
San Mateo County Transportation Authority

Steve Castellano, SR/WA  
AR/WS

Project Engineer  
Title

Project Manager  
Title

Right of Way Consultant  
Title

06/05/2025  
Date

06/05/2025  
Date

6/04/2025  
Date

Caltrans  
Reviewed and approved based on information provided to date:



06/25/2025

Lam Nguyen  
Caltrans District Branch Chief  
Local Programs  
Division of Right of Way

Date

**RIGHT OF WAY DATA SHEET FOR LOCAL PUBLIC AGENCIES**

(Form #)

EXHIBIT  
17-EX-21 (NEW 11/2019)  
Page 1 of 7

To: District Office Chief  
R/W Local Programs

Date: June 24<sup>th</sup>, 2025

Attention: District Branch Chief  
Local Programs

Co. SM Rte. 280 P.M. 0.04  
Expenditure Authorization 1Q710  
Project ID: 0418000320

Subject: RIGHT OF WAY DATA SHEET - LOCAL PROGRAMS

Project Description: The Alpine Road Corridor Improvement Project – Alternative 2

The California Department of Transportation (Caltrans), in cooperation with the San Mateo County Transportation Authority (SMCTA) and San Mateo County proposes the Alpine Road Corridor Improvement Project (project) located in San Mateo County at Alpine Road interchange on Interstate – 280 (I-280) at post mile (PM) 0.04. The project proposes measures to improve multimodal access, mobility, circulation, and enhance safety along Alpine Road and at I-280 interchange. A Project location map is included as Attachment A of the PSR-PDS.

The full project extends from West of La Mesa Drive on Alpine Road to East of Stowe Lane on Alpine Road. However, this PSR-PDS encompasses the portion of the project that is within Caltrans right of way, between the I-280 southbound and northbound ramp intersections. The project is anticipated to include the following elements within Caltrans right of way:

- Improve the existing intersection operations at I-280 ramps by replacing the existing side-street stop control and all-way-stop control with either signals or roundabouts as the intersection control.
- Replace large radius free right turns at I-280 ramps with smaller radius curb returns to allow for controlled and slow turning movements.
- Improve existing bicycle and trail facilities where applicable to provide a continuous and low stress bicycle and pedestrian corridor.
- Provide high-visibility crosswalks at intersections.
- Install necessary signage and pavement markings to implement the above improvements.

Right of way necessary for the subject project will be the responsibility of San Mateo County Transportation Authority.

The information in this data sheet was developed by Associated Right of Way Services, Inc. (AR/WS) and Kimley-Horn and Associates, Inc.

I. Right of Way Engineering

What level of Right of Way Engineering be required for this project?

Minimal (Requires Right of Way Retracement Narrative)

- No fee or easement acquisitions are required for the project; AND
- No excess lands will be created by the project; AND
- No Temporary Construction Easements (TCEs) are required for the project; AND

- No retaining walls, sound walls, footings, signs, traffic signals, or similar improvements will be constructed within ten feet of the existing right of way line.

   Minor (Requires Land Net, and PS&E Project Control sheets)

- No fee or easement acquisitions are required for the project; AND
- No excess lands will be created by the project; AND one or both of the following:
- Temporary Construction Easements (TCEs) are required for the project;
- Improvements will be constructed within ten feet of the existing right of way line.

  X Moderate (Requires Land Net, PS&E Project Control sheets, Base Map & Appraisal Map)

- At least one fee and/or easement (except TCEs) acquisition is required for the project; AND
- No excess lands will be created by the project; AND
- No parcels will be transferred to the State.

   Major (Requires full compliance with Right of Way Manual and Local Public Agency Coordination (LPAC) Guidelines including, but not limited to, pre-design Record of Survey, Base Map, Appraisal Map, legal descriptions and deeds, property transfer documents, JUAs/CCUAs, Record Map, monuments, and one or more Record of Surveys)

- One or more fee and/or easement parcels will be transferred to the State; AND/OR
- Excess lands will be created by the project.

II. Engineering Surveys

Is any surveying or photogrammetric mapping required?

   No (Provide an explanation in Remarks Section XIII)

  X Yes (Complete the following)

Datum Requirements

1. The units for this project are

  X U. S. Survey Feet;

   Metric (Provide an explanation in Remarks Section XIII)

2. The horizontal datum for this project is

  X California Coordinate System of 1983 (NAD 83 (1992), Epoch 2017.50);

   California Coordinate System of 1983 (NAD 83 (\_\_\_\_)), Epoch \_\_\_\_\_  
(Provide Datum Tag and Epoch);

   Other (Provide an explanation in Remarks Section XIII)

3. The vertical datum for this project is

X  North American Vertical Datum of 1988 (NAVD 88);

National Geodetic Vertical Datum of 1927 (NGVD 27) (Provide explanation).

Other (Provide explanation ).

III.  Parcel Information (Land and Improvements)

Are there any property rights required within the proposed project limits?

No   Yes  X  (Complete the following)

Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc.)

At the interchange where the project is in Caltrans right of way, all improvements are within existing R/W limits. No parcels will be acquired in the State's name.

Proposed partial fee acquisitions from three corner commercial properties within County right of way, two owners, for the purpose of construction roundabouts.

All acquisitions require less than 1,100 square feet.

All acquisitions are to be acquired by San Mateo County and remain in the County's vesting.

Right of Way Cost Estimate:

	Current Value	Escalation Rate	Escalated Value
A. Acquisition, including Excess Lands, Damages, Private Utilities and Goodwill	<u> \$502,000 </u>	<u> 5 % </u>	<u> \$581,000 </u>
B. Environmental Mitigation	<u> </u>	<u> % </u>	<u> </u>
C. Grantor's Appraisal Cost	<u> \$15,000 </u>	<u> NA </u>	<u> \$15,000 </u>
D. Utility Relocation - Project Liability (from Section VII)	<u> \$130,000 </u>	<u> % </u>	<u> \$130,000 </u>
E. Relocation Assistance	<u> \$0 </u>	<u> </u>	<u> \$0 </u>
F. Clearance Demolition	<u> </u>	<u> % </u>	<u> </u>
G. Title and Escrow Fees	<u> \$10,500 </u>	<u> % </u>	<u> \$10,500 </u>
<b><u> TOTAL ESCALATED VALUE </u></b>			<u> <b>\$736,500</b> </u>

Railroad Construction Costs (flagger, track work etc)

(These are construction costs to be included in PS&E)

Construction Contract Work \_\_\_\_\_

(These are  
construction costs  
to be included in  
PS&E)

TOTAL PARCEL COUNT \_\_\_\_\_ 3

IV. Dedications

Are there any property rights which have been acquired, or anticipate will be acquired, through the "dedication" process for the Project?

No  Yes \_\_\_\_\_ (Complete the following)

Number of dedicated parcels \_\_\_\_\_

Have the dedication parcel(s) been accepted by the municipality involved?

No \_\_\_\_\_ Yes \_\_\_\_\_

V. Excess Lands / Relinquishments

Are there Caltrans property rights which may become excess lands or potential relinquishment areas?

No  Yes \_\_\_\_\_ (Provide an explanation in Remarks Section XIII)

VI. Relocation Information

Are there relocations anticipated? YES \_\_\_\_\_ NO   
(If yes, provide the following information)

No. of personal property relocations \_\_\_\_\_

No. of single family \_\_\_\_\_ No. of business/non profit \_\_\_\_\_

No. of multi-family \_\_\_\_\_ No. of farms \_\_\_\_\_

Based on Draft/Final (circle one) Relocation Impact Statement/Study (circle one) - Dated \_\_\_\_\_, it is anticipated that sufficient replacement housing will/will (circle one) not be available without Last Resort Housing.

VII. Utility Relocation Information

Do you anticipate any utility facilities or utility rights of way to be affected?

No \_\_\_\_\_ Yes  (Complete the following.)

Estimated Relocation Expense

**RIGHT OF WAY DATA SHEET FOR LOCAL PUBLIC AGENCIES (Cont.)**

(Form #)

Facility	Owner	State Obligation	Local Obligation	Utility Owner Obligation
A. OH Utility Pole (7)	PG&E	\$	\$	\$125,000
B. OH Utility Pole (3)	Caltrans	\$	\$100,000	\$
C. Storm, Sewer, and Water Adjustments	County	\$	\$30,000	\$
D.		\$	\$	\$
E.		\$	\$	\$
F.		\$	\$	\$
Totals		\$ *	\$130,000	\$125,000
Number of facilities				

\*This amount reflects the estimated total financial obligation by the State.  
The following checked items may seriously impact lead time for utility relocation:

- Longitudinal policy conflict(s)
- Environmental concerns impacting acquisition of potential easements
- Power lines operating in excess of 50 KV and substations

VIII. Rail Information

Are railroad facilities or railroad rights of way affected?

No  Yes  (Complete the following)

Describe railroad facilities or railroad rights of way affected.

Owner's Name	Transverse Crossing	Longitudinal Encroachment
A.		
B.		

Discuss types of agreements and rights required from the railroads. Are grade crossings requiring services contracts, or grade separations requiring construction and maintenance agreements involved?

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IX. Clearance Information

Are there improvements that require clearance?

No  Yes  (Complete the following)

A. Number of Structures to be demolished \_\_\_\_\_

B. Estimated Cost of Demolition \$ \_\_\_\_\_

C. If there is demolition and clearance, will it be done prior to construction or as part of the construction contract?

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X. Hazardous Materials/Waste

Are there any sites and/or improvements in the Project Limits that are known to contain hazardous waste/materials?

None  Yes  (Explain in the Remarks Section XIII)

Are there any sites and/or improvements in the Project Limits that are suspected to contain hazardous waste/materials?

None  Yes  (Explain in the Remarks Section XIII)

XI. Project Scheduling Completion Dates

Proposed completion of Appraisal maps and legal descriptions, if needed	<u>January 2029</u>
Proposed Environmental Clearance	<u>March 2027</u>
Proposed R/W Certification	<u>April 2029</u>
Proposed Ready to List (RTL)	<u>May 2029</u>
Proposed Construction Award	<u>July 2029</u>

XII. Proposed Funding

	Local	State	Federal	Other
Acquisition*	<u>\$606,500</u>	<u>\$</u>	<u>\$</u>	<u>\$</u>
Utilities	<u>\$130,000</u>	<u>\$</u>	<u>\$</u>	<u>\$125,000</u>
Relocation Assistance Program	<u>\$0</u>	<u>\$</u>	<u>\$</u>	<u>\$</u>
R/W Support Costs	<u>\$71,100</u>	<u>\$</u>	<u>\$</u>	<u>\$</u>

\*Includes cost identified in Section III.A.(Acquisition), C. (Grantor's Appraisal Cost), & G. (Title and Escrow Fees).

XIII. Remarks

Section III Parcel Information (Land and Improvements) – Right of Way Estimate – A:  
Includes a 25% contingency factor to address, in part, damages, loss of business goodwill claims, limited administrative settlements, and other unknown potential impacts. An annual 5% Escalation Rate was applied to the Acquisitions covering a three-year period.  
The soil next to the ramps could potentially have lead concentrations. Hazardous material investigation will be completed in the PA&ED phase.

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Project Sponsor Consultant

Project Sponsor

R/W Professional (ie: qualified consultant or agency)

Prepared by:

Reviewed and Approved by:

Reviewed and Approved by:



Prasanna Muthireddy  
Kimley-Horn and Associates, Inc.

Liliana Price  
San Mateo County Transportation Authority

Steve Castellano, SR/WA  
AR/WS

Project Engineer  
Title

Project Manager  
Title

Right of Way Consultant  
Title

06/05/2025  
Date

06/05/2025  
Date

6/04/2025  
Date

Caltrans  
Reviewed and approved based on information provided to date:



06/25/2025

Lam Nguyen  
Caltrans District Branch Chief  
Local Programs  
Division of Right of Way

Date

# **Attachment N**

## **DIB 78**

# **DESIGN CHECKLIST**

## **FOR THE DEVELOPMENT OF GEOMETRIC PLANS**

DATE: \_\_\_\_\_

DIST-CO-RTE-PM/PM: 4-SM-280-.04  
 EA/Project ID: EA 1Q710  
 Description: Alpine Road Corridor Improvement Project  
 Project Engineer/Designee: Prasanna Muthireddy

### **Disclaimer Statement**

**This checklist is NOT to be used as a substitute for the Highway Design Manual (HDM) and intentionally does not address all design policies, procedures, and standards (bold, underlined, procedural, permissive, etc.) discussed in the HDM. A complete list of bold and underlined standards can be found in Tables 82.1A and 82.1B of the HDM.**

### **INSTRUCTIONS:**

- ❑ This checklist should be used during the development of the geometric plans for highway projects
- ❑ This checklist is to be used in conjunction with the most current versions of the Highway Design Manual (HDM), Design Information Bulletins (DIBs) and Project Development Procedures Manual (PDPM). It is not the intent that DIB 78 supersede the most current versions of the HDM and DIBs, but rather that it reference and refer to the current guidance available.
- ❑ References to the pertinent HDM Indices and standards are shown in brackets following the question.
- ❑ The following abbreviations and format are used in this checklist:  
     **B = Boldface Design Standard; HDM**  
     *U = Underlined Design Standard; HDM*
- ❑ Some items in the checklist may not apply to every project.
- ❑ Questions in Section 1.1 answered with "no" require an explanation in the space below the question and, if deviations from standards result, the appropriate approvals are to be obtained and the engineering decisions documented appropriately.
- ❑ Design features or elements that deviate from **boldface** standards require approval of the Chief, Division of Design. This approval authority has been delegated to the District Director for projects on conventional highways and expressways, and for certain other facilities in accordance with the District Design Delegation Agreement. Approval authority for design standards indicated in boldface type on all other facilities has been delegated to the Project Delivery Coordinators except as noted in Table 82.1A where: (a) the standard has been delegated to the District Director, (b)

the standards in Chapters 600 through 670 that require approval of the State Pavement Engineer, and (c) standards specifically delegated to the District Director per the District Design Delegation Agreement yet may involve coordination with the Project Delivery Coordinator. [B: Index 82.2(1)]

- The authority to approve exceptions to underlined standards has been delegated to the District Directors per the District Design Delegation Agreement. [U: Index 82.2(2)]
- The remaining design standards listed are permissive, and engineering decisions related to them should be documented in the project history files per index 82.2(4).

## 1.0 Basic Design Criteria

These design standards and criteria are to be established prior to geometric plan development.

### 1.1 Design Speed

HDM Index 101.1 should be read before selecting a design speed. Design speed selection will affect sight distance, vertical alignment, horizontal alignment, and other requirements. Based on engineering judgement, projects with multiple roadways may require more than one selected design speed.

Proposed design speed for project	
Alpine Road – Caltrans R/W	45 mph
Alpine Road – Outside Caltrans R/W	40 mph
Minimum Design Speed for this type of facility	
Alpine Road – Urban Arterial – Throughways	40-60 mph
Alpine Road – Facilities connecting to a freeway or expressway	35 (B)/45 (U) mph
Design Speed of the roadway segment prior to project	N/A
Design Speed of roadway segment after project	N/A
Posted speed (for existing facilities)	
Alpine Road	35 mph
Operating speed (85 <sup>th</sup> percentile or observed) (for existing facilities)	N/A
Does the design speed comply with Topic 101 including the parameters indicated in Index 101.1(2) and the ranges shown in Table 101.2? [B: Index 101.1, Index 101.2 and Table 101.2] and [U: Index 101.1]	YES

If the selected design speed does not fall within the range shown in Table 101.2, has concurrence been received from the Project Delivery Coordinator, District Design Liaison and District traffic unit?	N/A
Does the design speed meet or exceed the posted and operating speeds?	YES
Is design speed consistent with the Project Initiation Document (PID) or Project Report (PR)?	N/A
Does the PDT concur with the selected design speed of the project?	TBD

**1.2 Design Period**

1. Has a period of 20 years after completion of construction been selected as the design period for new facilities and reconstruction projects? If no, has the District Director provided approval with concurrence from the Project Delivery Coordinator? (See Index 103.2) **YES, 20 year**
2. If the project involves a roundabout, are you complying with the design period for roundabouts? (see Index 405.10(1)) **YES**

**1.3 Pedestrian Facilities**

1. Have suitable pedestrian facilities been provided for anticipated pedestrian demand that is based on existing and projected land uses? **YES**
2. Do all proposed pedestrian facilities comply with DIB 82? **YES**
3. Do sidewalk widths meet or exceed minimums? [U: Index 105.2] **YES**
4. Are curb ramps or blended transitions serving each pedestrian crossing? [U:Index 105.5(2)] **YES**
5. Are ramps and/or curb openings provided at midblock crosswalks and where pedestrians cross curbed channelization or median islands? (See Index 105.5 (2)) **N/A on this project. No midblock crosswalks proposed at this stage.**

## 1.4 Design Vehicle Selection

1. For State highways, has the STAA design vehicle been selected in accordance with HDM Topic 404 and Figures 404.5A or B for use on the National Network, Terminal Access, California Legal, and Advisory routes? (U: Index 404.4(1)(b)) **N/A on this project. Alpine Road is not listed on the National Network, Terminal Access, California Legal, or Advisory routes.**

2. If STAA design vehicle is not feasible and the California Legal Design Vehicle in Figures 404.5C and D is used, has concurrence been received from the District Truck Manager? (U: Index 404.4(2)(b)) **N/A on this project. Alpine Road is not listed on the National Network, Terminal Access, California Legal, or Advisory routes.**

## 1.5 Fencing

Have fencing or other approved barriers been installed on all newly acquired controlled access areas except as provided in Index 701.2(3)?

**[B: Index 104.4 and Index 701.2(1)] N/A on this project. Since we are only upgrading the on and off ramps along the corridor, these departmental fences are not required.**

## 1.6 Bike

Have appropriate bicycle facilities been included if part of the regional or local Bike Master Plan? [Index 115.1] **YES, assumption is to maintain existing bike network along Alpine Road.**

## 2.0 Geometric Design Criteria

### 2.1 Vertical Alignment

1. Sight Distance Criteria:

- a. Has the project sustained downgrades steeper than 3% and longer than one mile? If yes, has the design stopping sight distance in Table 201.1 been increased by 20%? [U: Index 201.3] **NO**
- b. Does each crest vertical curve provide the minimum stopping sight distance related to design speed as indicated in Table 201.1? **[B: Index 201.1 and Table 201.1]; (Also See Index 201.4 and Figure 201.4) N/A on this project**
- c. At each grade sag, does the length of vertical curve provide headlight sight distance? If no, has lighting been considered as mitigation? (See Index 201.5 and Figure 201.5) **YES**
- d. On freeways and expressways, is decision sight distance from Table 201.7 provided at lane drops and at off-ramp noses? [U: Index 201.7 and Table 201.7] **N/A on this project.**

2. Grade Standards:
  - a. Does the entire profile grade comply with the maximum grades specified in Table 204.3? [**B: Index 204.3**] **YES**
  - b. Does the profile grade exceed the minimum grades of 0.5% for snow country and 0.3% at other locations? [*U: Index 204.3*] **YES**
  - a. Are ramp grades less than or equal to 8 percent; or 9 percent if descending on-ramps or ascending off-ramps? [*U: Index 204.3 and Index 504.2(5)*] **YES**
3. Vertical Curve Criteria:
  - a. Do the lengths of the vertical curves equal or exceed:
    - 1) 10V, if the design speed is  $\geq 40$  mph and algebraic grade difference is  $\geq 2\%$ ? [*U: Index 204.4*] **N/A**
    - 2) 200 feet, if design speeds are  $< 40$  mph or algebraic grade difference is  $< 2\%$ ? [*U: Index 204.4*] **N/A**
  - b. On 2-lane highways, are the crest vertical curves less than  $\frac{1}{2}$  mile in length? (See Index 204.4) **N/A on this project**
4. Climbing Lane Requirements:
  - a. If the profile grade has sustained upgrades exceeding 2% where the total rise exceeds 50 feet, has the need for a climbing lane been investigated? (See Index 204.5(2) and Figure 204.5) **N/A on this project**
  - b. If a climbing lane is determined to be necessary, has the District Traffic Engineer been consulted regarding the length of climbing and passing lanes? (See Index 204.5(3)) **N/A on this project**
  - c. Is decision sight distance (See Table 201.7) provided at climbing lane drops on freeways? [*U: Index 204.5(2)*] **N/A on this project**
5. Structure Grade Lines:
  - a. Has the profile design taken into account the structure depth, falsework depth and vertical clearance? [Index 204.8 and Table 204.8] **N/A on this project**
  - b. Where grade lines are depressed under structures, has the sag been designed at a location to avoid conflicts between the structure footings and the drainage facilities? (See Index 204.8(3)) **N/A on this project**
  - c. Where the grade line on a bridge is constant or tangent, is the grade 0.3% or greater? (See Index 204.8(4)) **N/A on this project**
  - d. Where the grade line on a bridge includes a vertical curve, is there a fall of at least 0.05 foot per station and does the stated minimum grade extend for a length of no more than 100 feet? (See Index 204.8(4)) **N/A on this project**

- e. Is the falsework vertical clearance over freeway and non-freeway lanes at least 15 feet? [**B: Index 204.8(5)**] **N/A on this project**
- 6. Local Roads:
  - a. Do the local roads within the State rights of way with connections to freeways or expressways satisfy State highway design standards for vertical alignment? [Highway standards in Topic 204 applied by reference in Index 204.1.] **YES**
  - b. Do the local roads without connections to freeways or expressways satisfy AASHTO vertical alignment standards (or local standards that exceed AASHTO)? [**B: Index 204.1**] **N/A on this project**

## 2.2 Horizontal Alignment

1. Do all the curve radii exceed the minimum values listed in Tables 202.2A – 202.2E for the appropriate superelevation rate and design speed? [**B: Index 203.2** and **Tables 202.2A – 202.2E**] **YES**
2. Is the minimum stopping sight distance listed in Table 201.1 provided at each horizontal curve for the appropriate design speed? [**B: Index 203.1, Index 201.1** and **Table 201.1**]; (Also see Index 203.2 and Figure 201.6 if desired lateral clearance to an obstruction is not achievable) **YES**
3. If central angle is less than 10 degrees, is the curve length 800 feet or greater? (See Index 203.4) **YES**
4. Is the curve length on 2-lane roads between 500 feet and ½ mile? (See Index 203.4) **N/A on this project, no two lane roads along project corridor.**
5. Where compound curves are necessary, is the shorter radius, R1, at least two-thirds the longer radius, R2 (when R1 < 1000 feet)? On one-way roads does the larger radius follow the smaller radius? [*U: Index 203.5*] **YES**
6. Is the intervening tangent between horizontal reversing curves long enough to accommodate the standard superelevation runoffs given in Figure 202.5A? If not, is it at least long enough for the 6% maximum per 100 feet rate of change? ] When feasible, is at least 400 feet of tangent length provided? [*U: Index 203.6 and Figure 202.5A*] **N/A on this project, no reverse curves along project corridor.**
7. For local facilities, within the State R/W, with either no connection or a connection to a non-access controlled facility, does the horizontal alignment conform to AASHTO standards? [**B: Index 203.1**] If local agency standards are applied, do those standards exceed AASHTO standards? [*U: Index 203.1*] **YES, Alpine Road alignment conforms to AASHTO standards.**
8. For freeways, are 5000-foot and 3000-foot minimum radius curves used on the mainline in rural and urban areas respectively? (See Index 203.2) **N/A on this project, no mainline freeway work.**

### 2.3 Alignment Consistency

1. Is the variance in design speed between successive curves less than 10 mph? (Applicable only when a curvature of lower standard than the design speed for the project is introduced.) [*U: Index 203.3*] **YES, design speed is 45 mph in Caltrans R/W and 40 mph outside of it.**
2. Does each horizontal curve which is located at the end of a long tangent and/or steep downgrade meet or exceed the design speed? [*U: Index 203.3*] **YES**
3. Are the horizontal and vertical alignments coordinating such that the horizontal curves are not “hidden” behind crest vertical curves? (See Index 203.3) **YES**
4. Where horizontal and vertical curves are superimposed at sags in grade, or summits in mountainous or rolling terrain, is the design speed of the horizontal curve at least equal to the design speed of the vertical curve? Also, is the horizontal curve design speed no more than 10 mph less than the estimated or measured running speed of the approach roadway? [*U: Index 204.6*] **YES**

### 2.4 Superelevation

1. Have the superelevation rates specified in the Highway Design Manual been used for all horizontal curves? [**B: Tables 202.2A – 202.2E**] **YES**
2. On rural 2-lane roads, is the standard superelevation rate carried across the full width of the traveled way and shoulders, except on transitions? [*U: Index 202.2*] **N/A on this project**
3. Has adverse superelevation been avoided in warping street or ramp surface areas for drainage? (See Index 202.3) **N/A on this project**
4. For undivided highways, has the axis of rotation been selected to improve perception of curves (i.e. on desert highways) and to avoid drainage pockets at superelevated highway sections (which usually occur in flat terrain)? (See Index 202.4(1)) **N/A on this project**
5. For freeways with an initial median width of 65 feet or less, has the axis of rotation been selected at the centerline? Where initial median width is greater than 65 feet, ultimate median width is 65 feet or less and the resulting initial median slope is steeper than 10:1, is the axis of rotation at the ultimate median edges of traveled way? (See Index 202.4(3)(a)) **N/A on this project**
6. For divided freeways and conventional highways, has the axis of rotation been selected with consideration of aesthetics, grade distortion, superelevation transitions, drainage and driver perception? (See Index 204.2) **YES**
7. Is the superelevation transition designed in accordance with the diagram and tabular data shown in Figure 202.5A? [*U: Index 202.5(1)*] **N/A on this project**
8. Where standard superelevation transition is not attainable (restrictive situations), has the rate of change of the cross slope been limited to 6% per 100 feet? [*U: Index 202.5(3)*] **N/A on this project**

9. Have the profiles for the edge of traveled way and shoulders been plotted to identify irregularities resulting from the interaction of the super elevation transition and the vertical alignment of the roadway? Have the irregularities been eliminated by introducing smooth curves? Have transitions located near grade sags and crests been checked for flat areas that are undesirable for drainage? (See Index 202.5 (1)) **YES**
10. Does two-thirds of each superelevation runoff length occur on the tangent which precedes or follows the curve, and does one-third occur within the curve? [U: Index 202.5(2)] **YES**
11. Are the superelevation transitions for the project avoiding the bridges? (See Index 202.5(4)) **YES**
12. Are the superelevation transitions for compound curves, if used on the project, designed in accordance with Figure 202.6? [U: Index 202.6] **N/A**
13. Do the superelevation rates on the local streets and roads that are within the State R/W with or without connection to State facilities, conform to AASHTO standards [**B: Index 202.7**]; or, local agency standards that exceed AASHTO standards? [U: Index 202.7] **YES**
14. Has superelevation been avoided for horizontal curves with a radius of 10,000 feet or greater where the combination of flat grades and superelevation transitions result in locations where surface water is allowed to concentrate on the pavement? (See Index 202.2 and Index 831.4 (5)) **N/A on this project**

## 2.5 Geometric Cross Section

1. Basic roadway widths for projects which include the construction or reconstruction of local streets and roads as part of the freeway project consider the following guidance:
  - 1) Has the State highway undercrossing span length been designed to accommodate the future requirements of the local facility? (See Index 208.1(2)(b)) **YES**
  - 2) Where a local facility, not on the NHS, crosses over or under a freeway or expressway, but has no connection to the State facility, does the minimum cross section conform to local agency adopted standards? **N/A on this project. Alpine Road connects to interstate 280 with on and off ramps.**  
[**B: Index 308.1**]
  - 3) Where a local facility, on the NHS, crosses over or under a freeway or expressway, but has no connection to the State facility, does the minimum cross section conform to AASHTO standards? (See Index 308.1) **N/A on this project. Alpine Road connects to interstate 280 with on and off ramps.**
  - 4) Is the minimum width of all 2-lane overcrossing structures at least 32 feet curb to curb? [**B: Index 308.1**] **YES**
  - 5) Where a local facility crosses over, or under, a freeway or expressway and connects to the State facility, does the minimum cross section meet the

standards for a conventional highway with the exception that the outside shoulder width shall match the approach roadway, but not be less than 4 feet?

[B: Index 308.1] YES, with bike lane and buffer being greater than 4' shoulder width.

At such locations, is the minimum width of the 2-lane overcrossing structure 40 feet curb to curb? [B: Index 308.1] YES

6) Are the shoulders at least 3 feet wider than gutter pans, if curbs with gutter pans are proposed? [B: Index 308.1] YES. Bike lane and bike buffer greater than 3 feet plus 2 foot gutter pans.

## 2. Traffic Lane and Shoulder Widths and Cross Slopes

- a. Are all conventional highway traffic lanes outside of urban, city or town centers (rural main streets) 12 feet wide where posted speeds exceed 40 mph and average daily truck volumes exceed 250 per lane? [B: Index 301.1] N/A on this project, posted speed is 35 mph.
- b. Where rumble strips are proposed in the shoulder, has 3 feet of shoulder width been provided to the right of the grooved rumble strip or 4 feet if a vertical element is present at the edge of shoulder? [B: Index 302.1] N/A on this project, no rumble strips proposed.
- c. On new construction projects for all types of surfaces, is the traveled way cross slope 2%? [B: Index 301.3(2)(a)] N/A on this project, not new construction.
- d. On resurfacing and widening projects, is the traveled way cross slope between 1.5% and 3% when necessary to match the existing cross slope? [B: Index 301.3(2)(b)] YES
- e. Is the maximum algebraic difference in cross slope:
  - 1) 6% or less between adjacent lanes of opposing traffic for rehabilitation and widening projects? [U: Index 301.3] YES
  - 2) 4% or less between adjacent lanes of opposing traffic for new construction? [B: Index 301.3(2)] N/A on this project, not new construction
  - 3) 4% or less between same direction traffic lanes of divided roadbeds? [U: Index 301.3] N/A on this project
  - 4) 8% or less between the traveled way and shoulder for new construction and pavement overlay projects? [U: Index 301.3] N/A on this project.
- f. On resurfacing projects, has the entire paved shoulder and traveled way been resurfaced where bicycle traffic is not prohibited? [B: Indices 625.2(2) and 635.2(1)] N/A on this project, bike traffic is allowed along the corridor.
- g. Are the shoulder widths as specified in Table 302.1 provided? [B: Index 302.1] YES. 4' left shoulder on 280. 8' right shoulder on 280 ramps. No shoulder width along Alpine Road due to bike lane in most areas.

- h. Do the shoulders to the right, on normal tangents, slope away from the traveled way at 2 to 5%? [**B: Index 302.2**] **YES**
  - i. On divided cross sections, do the shoulders to the left slope:
    - In the plane of the traveled way when the median is paved or when a roadway crosses a bridge structure? [**B: Index 302.2**] **N/A on this project, no bridge structure.**
    - At 2% away from the traveled way when the median is depressed? [**B: Index 302.2**] **YES**
  - j. Do the lane drops and the lane width reductions for the through lanes have a minimum length of WV [*U: Index 206.3*] **NO**
3. Median Standards:
- a. Are the minimum median widths provided, based on facility and place type? [**B: Index 305.1**] and [*U: Index 305.1*] **YES**
  - b. Has the median width been selected to provide the standard shoulder width and horizontal clearance to overcrossing structure columns? [**B: Table 302.1 and Index 309.1(3)**] **YES**
  - c. Is the use of curb in the median in compliance with the guidance of Topic 303 and Index 405.5(1)? [*U: Index 303.1 and Table 303.1*] **YES**
  - d. Are emergency passageways located only where decision sight distance is available (see Table 201.7) [*U: Index 405.5(2)*] **N/A for this project.**
  - e. Are median openings spaced at intervals no closer than 1600 feet? If a median opening falls within 300 feet of an access opening, is it placed opposite of the access opening? [*U: Index 405.5(2)*] **N/A for this project.**

## 4. Bridges and Grade Separations

- a. At a minimum, does the clear width of each bridge, including grade separation structures, equal the width of the approach roadway (traveled way and paved shoulders)? [**B: Index 208.1**] *N/A for this project*
- b. Where a bridge is constructed on a 2-lane, 2-way road to replace an existing bridge, is the roadbed width at least 32 feet when the ADT is less than 400 or 40 feet when the ADT is greater than 400 vehicles? [**B: Index 208.1(1)(a) and Index 307.2**] *N/A for this project*
- c. Where the approach shoulder width is less than 4 feet, is the minimum offset on each side 4 feet and has this decision been documented in accordance with Index 82.2? [**B: Index 208.1(1)(b)**] *N/A for this project*
- d. Is the cross slope on all structures the same as that of the roadway that approaches them? [*Index 208.2*, **B: Index 301.3**, and **B: Index 302.2**] *N/A for this project, overcrossing is not part of this project*
- e. Are bridge medians less than 36 feet wide on multilane divided highways decked? [*U: Index 208.3*] *N/A for this project, overcrossing is not part of this project*
- f. If sidewalks are proposed on structures, are they at least 6 feet wide? [**B: Index 208.4**] *N/A for this project, overcrossing is not part of this project*
- g. Are embankment end slopes at open ended structures on all highways no steeper than 1½:1?  
(See Index 208.5) *N/A for this project, overcrossing is not part of this project*
- h. Has protective screening been provided along new overcrossing structure sidewalks in urban areas? [*U: Index 208.10(2)*] *N/A for this project*

## 5. Side (Cut &amp; Fill) Slopes:

- a. On new construction, widening, or other slope modifications, are embankment (fill) slopes 4:1 or flatter? [*U: Index 304.1(a)*] If embankment slopes steeper than 4:1 are included within the project, has the District Landscape Architect and District Stormwater Coordinator approved the nonstandard side slopes per Index 304.1(b)? If side slopes steeper than 2:1 are included within the project, has District Maintenance approved the nonstandard side slopes per Index 304.1(c)? *N/A on this project*
- b. Is a uniform catch point of at least 18 feet used in light grading areas where normal slopes catch less than 18 feet from the edge of shoulder? [*U: Index 304.1*] *N/A on this project*
- c. Where appropriate, has snow removal been considered in slope design?  
(See Index 304.1) *N/A*
- d. Is there a minimum clearance of at least 10 feet between the right of way lines and the catch points for the cut/fill slopes? [Index 304.2] *TBD during PA&ED*

- e. Is all slope benching and cut widening designed in accordance with Index 304.3 and the Geotechnical Design Report? (See Indices 113.1, 304.1(c), and 304.3) **N/A on this project**
  - f. Have the contour grading plans been prepared? Are the slopes rounded? (See Index 304.4) **N/A at this time**
  - g. Are "steps" designed into the cut slopes to encourage revegetation with native plants? (See Index 304.5) **N/A on this project**
6. Frontage Roads:
- a. Is the minimum paved 2-lane cross section width including 4-foot shoulders without curb and gutter 32 feet if 12-foot lanes are to be provided and 30 feet if 11-foot lanes are to be provided? [**B: Index 310.1**] **N/A for this project**
  - b. Is the minimum paved 2-lane cross section width, including 5-foot shoulders and curb and gutter 34 feet if 12-foot lanes are to be provided and 32 feet if 11-foot lanes are to be provided? [**B: Index 310.1**] **N/A for this project**
  - c. In urban areas and in mountainous terrain, is the width of the outer separation a minimum of 26 feet from the edge of traveled way to edge of traveled way? [*U: Index 310.2*] **N/A for this project**
  - d. In rural areas, other than mountainous terrain, is the outer separation a minimum of 40 feet wide from edge of traveled way to edge of traveled way? [*U: Index 310.2*] **N/A for this project**
7. Right of Way:
- a. If the project requires right of way acquisition, have future project needs and the ability to meet all design standards, without exceptions, been taken into consideration during the establishment of the new right of way lines for this project? **N/A on this project**
  - b. Have stormwater storage and treatment features been incorporated? Are they within the right of way? **YES**
8. Clearances:
- a. Horizontal
    - 1) Have all fixed objects that are necessary highway features within the Clear Recovery Zone (CRZ) been eliminated, moved, shielded, redesigned to be made yielding or shielded in accordance with HDM Index 309.1(2)(a)? [*U: Index 309.1(2)(a)*] **YES**
    - 2) Are discretionary fixed objects, as defined in HDM Index 309.1(2)(b), proposed on highways located beyond the CRZ at a minimum of 52 feet horizontally or 8 feet vertically up-slope from the planned ultimate edge of traveled way? If not, have they been made breakaway or shielded behind existing guardrail, barrier or other safety devices? [*U: Index 309.1(2)(b)*] **N/A on this project**

- 3) If fixed objects are placed within the CRZ, has the minimum horizontal clearance (i.e., standard shoulder width, but not less than 4 feet) been provided to unshielded fixed objects, either yielding or unyielding? Has a minimum horizontal clearance of 10 feet been provided to walls? [**B: Index 309.1(3)(a), Index 309.1(3)(b), and Index 309.1(3)(c)**] **YES**
- 4) Have the horizontal Stopping Sight Distance requirements been met where it is planned to use the minimum horizontal clearance to objects, barriers, walls, or cut slopes? [**B: Index 309.1(1)**] **YES**
- 5) Where noise barriers are located 15 feet or less from the ETW, has the noise barrier been placed on a safety shape barrier? [**B: Index 1102.2**] **N/A on this project**
- 6) In areas without curbs, has the face of Type 60 concrete barrier been constructed integrally at the base of any retaining, pier, or abutment wall facing traffic that is 15 feet or less from the edge of traveled way (right or left of traffic and measured from the face of the wall)? [*U: Index 309.1(3)*] **N/A on this project**
- 7) For bridge deck widening projects, has the HQ Transportation Permit Program provided the minimum width of roadway openings between temporary K-rail? (See Index 309.1(3)) **N/A on this project**

b. Vertical

- 1) For all construction except overlay projects, is the minimum vertical clearance over the roadbed of the State facility (freeways and expressways) 16 feet 6 inches?  
[**B: Index 309.2(1)(a)**] **YES**
- 2) Is the minimum clearance over the roadbed of the State facility (freeways and expressways) for an overlay project 16 feet? [**B: Index 309.2(1)(b)**] **YES**
- 3) Is the minimum vertical clearance over the traveled way of a conventional highway, parkway or local facility 15 feet over the traveled way and 14 feet 6 inches over the shoulders of all portions of the roadbed? [**B: Index 309.2(1)(c)**] **YES**
- 4) Is a minimum vertical clearance of 23 feet 4 inches provided above railroad tracks where freight cars are operated? Is a minimum vertical clearance of 19 feet provided above railroad tracks on which freight cars are not operated? [*U: 309.5(1)*] **N/A on this project**
- 5) Is the vertical clearance to pedestrian overcrossings 2 feet greater than the standard clearance provided for major structures on the facility?  
[**B: Index 309.2(2)**] **N/A on this project**
- 6) Do all sign structures have a minimum vertical clearance of 18 feet over the roadbed of the State facility?  
[**B: Index 309.2(2)**] **N/A on this project**

- 7) Is the rural interstate or single rating facility in urban areas a subset of the Interstate System described in Table 309.2B and Figure 309.2? If yes, does the vertical clearance meet the minimum clearance for freeways and expressways in Index 309.2(1)? [**B: Index 309.2(3), Table 309.2B and Figure 309.2**] **N/A on this project**
- 8) If Federal-aid funding is to be used, are all structures within the Federal-aid participation vertical clearance limits? (See Index 309.2(5)) **N/A on this project**
- 9) If the existing vertical clearance is to be modified, has the Regional Permit Manager been informed of the decision? (See Indices 309.2(4) and 204.8(5)) **N/A on this project**

- c. Tunnels
  - 1) On conventional highways, is the minimum vertical clearance 15 feet over any point of the traveled way and 14 feet 6 inches above the gutter at the curb line? On freeways and expressways, is the minimum vertical clearance 16 feet 6 inches? [**B: Index 309.3(2)**] **N/A on this project**
  - 2) In one-way tunnels on conventional highways is the minimum side clearance from the edge of the traveled way 4 feet 6 inches on the left and 6 feet on the right? For two-way tunnels, is the clearance 6 feet on each side? [**B: Index 309.3(1)**] **N/A on this project**
- d. Elevated Structures
 

Is the minimum horizontal clearance between elevated highway structures and adjoining building or other structures 15 feet for single-deck structures and 20 feet for double-deck structures? [**B: Index 309.4**] **N/A on this project**
- e. Airway - Highway
  - 1) When construction is planned near an airport or heliport (civil or military), have the airway-highway clearance requirements been met or exceeded? (See Topic 207) **N/A on this project**
  - 2) If applicable, have the procedures for submitting the clearance data been followed? (See Index 207.3) **N/A on this project**
- f. Railroad
  - 1) Have the minimum clearances between railroads and structures been provided? (See Index 309.5) **N/A on this project**
  - 2) If a railroad is involved, or is in the vicinity of the project, has the railroad and the Public Utilities Commission granted project approval? (See Index 309.5(4)) **N/A on this project**

## 2.6 At-Grade Intersections

1. Is the intersection configuration consistent with Intersection Control Evacuation and Traffic Analysis? (See Index 401.5(2)) **TBA in next phase of project**
2. Are skewed intersections greater than 75 degrees (90 degrees preferred)? If not, has mitigation been provided for the affected intersection design features? [*U: Index 403.3*] and (See Figure 403.3A and 403.3B) **YES, both intersections greater than 75 degrees**
3. Is striping used in lieu of curbs to delineate islands adjacent to high-speed traffic? (See Index 405.4(2)) **N/A on this project, no islands**
4. Truck turn templates:
  - a. Has the STAA truck turn template been used in the design of all interchanges (i.e., ramp intersections) and intersections on the National Network and on routes leading

to and from designated Service and Terminal Access routes? [U: Index 404.4(1)]  
**N/A on this project, STAA not needed for truck turning templates.**

- b. Has the California truck turn template been used after concurrence from the District Truck Manager in the design of interchanges and intersections that cannot feasibly accommodate the STAA design vehicle? [U: Index 404.4(2)(b)] **Not a truck route, standard templated has been used**
5. Sight Distance Requirements
- a. Are corner sight distances provided at each unsignalized intersection per the equation specified and with the time gap as indicated in Table 405.1A? [U: Index 405.1(2)(a)(b)] **N/A, intersections to be signalized or roundabouts.**
- b. Are corner sight distances provided at each signalized intersection equal to the stopping sight distance provided in Table 201.1? [U: Index 405.1(2)(b)] **YES**
- c. During the determination of corner sight distance at an intersection, was a minimum of 10 feet plus the shoulder width of the major road, but not less than 15 feet, used for driver set back on the minor road? [U: Index 405.1(2)(a)] **YES.**
- d. For private road and rural driveway intersections, does the measured corner sight distance equal or exceed the stopping sight distance? [U: Index 405.1(2)(c)] **N/A on this project, no private or rural driveways in Caltrans R/W.**
- e. At intersections where a State highway route turns or crosses another State highway, is decision sight distance given in Table 201.7 provided? [U: Index 405.1(3)] **N/A. No crossing of State Highways.**
- f. Is minimum stopping sight distance provided at intersections including private road connections? (Index 201.1) **N/A, no private road connection on this portion of project.**
6. Channelization:
- Is turn lane design consistent with the Traffic Operations Analysis? **TBA in next phase of project**
- a. Are lane widths for both single and double left-turn lanes 12 feet on State highways? On conventional highways, are lanes 11 feet for speeds less than or equal to 40 miles per hour and AADTT less than 250 per lane in urban, city or town centers (rural main streets)? [**B: Index 405.2(2)(a)**] **NO. Left turn lane from Alpine Road to I-280 WB is 11 feet wide.**
- b. Do the approach taper and deceleration lane designs meet or exceed the minimum lengths recommended (See Figure 405.2A, B and C, and Tables 405.2A and B)? Has storage length been considered (See Indices 405.2(2)(d) and 405.2(2)(e))? **Storage length will be determined in next phase of the project when the traffic operational analysis is prepared.**

- c. If the project includes a two-way left-turn lane, is the lane 14 feet wide? If not, is the lane the preferred 12 feet wide? [B: Index 405.2(4)] **N/A on this project, no TWLTL in Caltrans R/W**
  - d. Do right-turn lane widths satisfy the minimum lane and shoulder width requirements? Is the shoulder width adjacent to any right-turn lane at least 4 feet? [B: Index 405.3(2)(a)] **NO, 4' shoulder width not satisfied.**
  - e. At off-ramp terminals, are the ramps perpendicular to the cross road? (See Index 502.2) **YES**
  - f. Are traffic islands at least 50 square feet in area? If curved and elongated, are median islands a minimum of 4 feet wide and 20 feet long? (Index 405.4(1)) **N/A on this project, no traffic islands.**
  - g. Have pedestrian refuge islands been provided (at unsignalized intersections in rural city/town centers (rural main streets), suburban or urban areas) between opposing traffic where pedestrians are allowed to cross 2 or more through traffic lanes in one direction of travel at marked or unmarked crosswalks? [U: Index 405.4(3)] **N/A on this project, these crossings will be signalized to provide the proper walk time.**
  - h. If traffic islands are to be used as pedestrian refuge, they must be large enough to provide a minimum of 6 feet in the direction of pedestrian travel, without exception. [Index 405.4(3), absolute requirement Index 82.1(2)] **N/A on this project, no traffic islands**
  - i. Have through lanes and right-turn-only lanes been separated with a 4-foot width when bikes are permitted, or minimum 6-foot widths where posted speed is greater than 40 miles per hour? [U: Index 403.6(1)] **YES, bike lane width is greater than 4' width since posted speeds are 35 mph**
  - j. Have optional right-turn lanes been avoided where right-turn-only lanes are located on roads where bicycle travel is permitted? [U: Index 403.6(1)] **YES**
7. Is curb use consistent with the posted speed and location of the facility? [U: Index 303.1] (See Table 303.1) **YES. Type B-6 to be proposed, posted speeds are 35 mph.**
8. Are median openings spaced at least 1,600 feet apart? Have median openings within 300 feet of an access opening or street intersection been shifted to be directly opposite such intersections? [U: Index 104.5 and Index 405.5 (2)] **N/A on this project, no space for median openings due to intersections and expressway structure.**
9. Have emergency passageways been located only where decision sight distance is available? [U: Index 405.5(2)] (See Table 201.7) **N/A on this project, no space for median openings due to intersections and expressway structure.**
10. On expressways - -  
Are access openings spaced at least ½-mile from an adjacent public road intersection or to another private road access opening that is wider than 30 feet? [U: Index 205.1

- (I)] Is stopping sight distance provided? **[B: Index 205.1] N/A on this project, no expressway work.**
11. Do urban driveway designs meet the width, spacing, and surfacing requirements of Design Information Bulletin 82, the District's permit drawings, and the construction details of the Standard Plans? (See Index 205.3) **N/A on this project.**
  12. For driveways on frontage roads and in rural areas, do the proposed driveway widths accommodate the turning radius of the design vehicle for the driveway? (See Index 205.4) **N/A on this project, no driveways in the project limits.**
  13. On signal installation projects, on two-lane highways, where widening is needed for adequate operation of the intersection, have the minimum design requirements of Figure 405.9 been met or exceeded? (See Index 405.9) **YES**
  14. Do public road intersections comply with Figure 405.7? Have the appropriate corner radii been selected? (See Indices 405.7 and 405.8) **YES, 40' min used for corner radii**

## 2.7 Interchange Design Criteria

1. Is the minimum interchange spacing **[B: Index 501.3]: N/A on this project**
  - a. One mile in urban areas? **N/A on this project**
  - b. Two miles outside of urban areas? **N/A on this project**
  - c. Two miles between freeway-to-freeway interchanges and other interchanges? **N/A on this project**
  - d. Three miles between interchanges on Interstates outside of urban areas? **N/A on this project**
2. Has the FHWA been requested to conceptually approve new interchanges and modifications to existing interchanges on the Interstate highway system? (See index 503.2)  
(FHWA Interstate System Access Information Guide;  
<http://www.fhwa.dot.gov/design/memos/100831.cfm>) **N/A on this project**
3. Are all traffic movements provided for at each proposed local road interchange so as to minimize the possibility of wrong-way movements? In other words, have isolated ramps and partial interchanges been avoided? **[B: Index 502.2] YES, isolated ramps and partial interchanges have been avoided.**
4. Have all movements been provided at freeway-to-freeway interchanges?  
(See Index 502.3(2)(c)) **N/A on this project, freeway to roadway connection and not a freeway to freeway interchange**
5. Do loop connectors have radii in the range of 150 feet to 200 feet?  
(See Index 502.3(2)(e)) **N/A on this project, freeway to roadway connection and not a freeway to freeway interchange**
6. Do direct connectors have minimum radii of 850 feet? Radii of at least 1,150 feet is desirable. (See Index 502.3(2)(e)) **N/A on this project, freeway to roadway connection and not a freeway to freeway interchange**

7. Has each interchange design been reviewed by the Project Delivery Coordinator and/or District Design Liaison, District Traffic Engineer or Designee, other Headquarters staff, and the FHWA Transportation Engineer as appropriate? (See Index 503.2) **TBD**
8. Has decision sight distance as given in Table 201.7 been provided at all freeway exits and branch connectors? [*U: Index 504.2(4)(a)*] **N/A on this project, project does not conflict with existing freeway exits and branch connections**  
 Has the minimum decision sight distance of 600 feet been provided at secondary exits on collector-distributor roads? [*U: Index 504.2(4)(a)*] **N/A on this project**
9. Is the maximum ramp profile grade 8% or less? A maximum grade of 9% is allowed on descending entrance ramps (except loops) and ascending exit ramps. The 1% steeper grade should be avoided on descending loops to minimize overdriving of the ramp. (See Indices 504.2(5) and 504.3(8)) and [*U: Index 204.3*] **YES**
10. Is the maximum profile grade on freeway-to-freeway direct connections 6%? [*A: Index 504.4(3)*] **N/A on this project**
11. Is the vertical curve beyond the nose of each freeway exit designed to provide a minimum 50 mph stopping sight distance? [*U: Index 504.2(5)(a)*] **YES**
12. Does the on-ramp profile approximately parallel the mainline profile for at least 100 feet prior to the inlet nose to provide visibility that facilitates merging? (See Index 504.2(5)(b)) **YES**
13. For ascending off-ramps joining a crossroad, if the ramp ends in a crest vertical curve, does the last 50 feet of ramp have a profile grade of 5% or less? [*U: Index 504.2(5)(a)*] **YES**
14. For descending off-ramps, is the sag vertical curve length at the ramp terminal at least 100 feet? [*U: Index 504.2(5)(a)*] **YES**
15. At overcrossing interchanges, do all the ramps intersect the crossroad where the profile grade of the overcrossings is 4% or less? [*U: Index 504.3(3)*] **N/A on this project, no overcrossing interchanges**
16. For left-turn maneuvers from an off-ramp at unsignalized ramp intersections, is the corner sight distance criteria met per Index 405.1 provided? [*U: Index 504.3(3)*] **N/A on this project, no unsignalized ramp maneuvers**
17. Is a minimum of 400 feet (500 feet is preferred) provided between each ramp intersection and the adjacent local street intersection curb return to curb return? [**B: Index 504.3(3)**] and [*U: Index 504.3(3)*] **YES**
18. At freeway entrances and exits, is 5% the maximum algebraic difference in pavement cross slope between adjacent traffic lanes, or between a traffic lane and the adjacent gore area? [*U: Index 504.2(5)*] **YES**
19. Where ramps have curve radii of 300 feet or less with a central angle greater than 60 degrees, as mentioned in Index 504.3(1)(b), have they been widened for trucks in accordance with Table 504.3? [**B: Index 504.3(1)(b)**] **NO, off ramp from Alpine Road**

- NB to I-280 EB is 16' wide lane width, standard says it needs to be 20' wide with 110' radius.
20. Does each freeway entrance and exit ramp, excluding direct connections with median HOV lanes, express Toll lanes or BRT lanes, connect to the right of through traffic? HOV "drop" ramps may enter and exit the Freeway from the median. [**B: Index 504.2(1)**] **YES**
  21. Does each entrance and exit design conform to the standard designs illustrated in Figures 504.2A-B (single lane), and Figure 504.3K (two-lane entrances and exits), and/or Figure 504.4 (diverging branch connections)? [**B: Index 903.5(1)** and **Index 904.3(1)**] and [*U: Index 504.2(2)* and *Index 107.1*] **YES**
  22. Has the need for an auxiliary lane to facilitate the merging of trucks been considered where the physical and traffic conditions cited in Index 504.2(5)(b) are present? [*U: Index 504.2(5)(b)*] TBD based on traffic
  23. Where a cut slope restricts visibility on an exit ramp, and cut widening is not feasible, has an auxiliary lane been provided in advance of the exit? [*U: Index 504.2(3)*] **N/A on this project**
  24. Has a design speed of 50 mph been provided at the exit nose of ramps or branch connections? [*U: Index 504.2(4)(a)*] **N/A**
  25. Prior to the first curve of a freeway exit, has the standard deceleration length, "DL," been provided in accordance with Figure 504.2B? Has "DL" been provided for the first curve after the exit from a collector-distributor road? [**B: Index 504.2(2)**] and [*U: Index 504.2(2)*] **N/A on this project, we are not disrupting the first curves on freeway exits.**
  26. Where exit ramps are preceded by or located on sustained and significant downgrades or followed by a descending loop or hook ramp, has additional "DL" distance been provided (See AASHTO Policy on Geometric Design of Highways and Streets (Green Book))? (See Index 504.2(2)) **N/A on this project**
  27. If the exit nose is located downstream of the 23 feet dimension, is the maximum paved width between the mainline and ramp shoulder edges 20 feet? [*U: Index 504.2(2)*] **YES, 20' gap provided**
  28. Is the design speed at the inlet nose consistent with the approach alignment? For branch connections, or diamond ramps with a high-speed alignment, is the design speed at the inlet nose at least 50 mph? [*U: Index 504.2(4)(b)*] **N/A on this project, no proposed work on freeway entrances**
  29. Is the design speed on each branch connection a minimum of 50 mph? [*U: Index 504.4(2)*] [Metered connectors **B: 504.3(2)(d)**] **N/A on this project**
  30. If smaller radius curves, with lower design speeds, are used, is the vertical sight distance consistent with the speeds of the approaching vehicles? [*U: Index 504.4(2)*] **N/A on this project**

31. Does the design for each ramp terminus ending at an intersection where all traffic is expected to make a turning movement provide for a minimum design speed of 25 mph? [U: Index 504.3(1)(a)] **YES**
- When a "through" movement is provided at the ramp terminus, is the ramp design speed at least equal to or in excess of the design speed of the facility for which the through move is provided? [U: Index 504.3(1)(a)] **YES**
32. On a single lane ramp where additional lanes are provided near the entrance ramp intersection, is the lane drop accomplished over a distance equal to WV? Is the lane dropped on the right? [U: Index 504.3(5)] **N/A on this project, no lane drops on ramps**
33. Where the length of any single-lane ramp exceeds 1,000 feet, has an additional lane been provided to permit passing maneuvers? [U: Index 504.3(5)] **N/A on this project, no 1000' single lane ramps provided.**
34. Excluding ramp metering retrofit projects, is the lane drop taper on a two-lane entrance ramp equal to 50:1? (See Index 504.3) **N/A on this project, no lane drop tapers for entrance ramps needed.**
35. Where design year traffic volumes exceed 1,500 equivalent passenger cars per hour, has a two-lane exit ramp been provided? [U: Index 504.3(6)] **N/A at this time**
36. Has a 1,300-foot length of auxiliary lane been provided prior to each two-lane exit ramp? [U: Index 504.3(6)] **N/A on this project, no two lane exit ramps provided**
37. Where the design year volumes range between 900 to 1500 vehicles per hour (vph), has a single lane exit been designed with provisions for the addition of a second lane and a standard auxiliary lane? [U: Index 504.3(6)] **N/A at this time**
38. Is there at least 1,000 feet between successive on-ramps? If not, does the upstream ramp add an auxiliary lane such that the downstream ramp merges with the auxiliary lane in a standard 50:1 (longitudinal to lateral) convergence? [U: Index 504.3(9)] **YES**
39. Is there at least 1,000 feet between successive exit ramps on freeways? Also, is there at least 600 feet between successive exit ramps from collector-distributor roads? [U: Index 504.3(10)] **YES**
40. Are curbs avoided on the high side of ramps or in exit ramp gore areas except at collector distributor roads? (See Index 504.3(11)) **YES**
41. On Freeway-to-Freeway connectors:
- Where the design hourly volume exceeds 1,500 equivalent passenger cars per hour (pcph), has a branch connection been provided? [U: Index 504.4(6)] **N/A on this project, no freeway to freeway connections**
  - Where the design hourly volume ranges between 900 and 1,500 pcph, has a single lane connection been proposed with provisions for adding an additional lane? [U: Index 504.4(5)] **N/A on this project, no freeway to freeway connections**
  - Have single lane connectors that are longer than 1,000 feet been widened to two lanes with a minimum of 5-foot shoulders to facilitate passing?

- [**B: Index 504.4(4)(a)**, *U: Indexes 504.4(5)* **N/A on this project, no freeway to freeway connections**
- d. Are the lengths of all lane drop tapers not less than WV? [*U: Index 504.4(7)*] **N/A on this project, no freeway to freeway connections**
42. Are merging and diverging branch connections designed in accordance with Figures 504.3K and 504.4, respectively? [*U: Index 504.4(6)*] **N/A on this project**
43. At all branch merges, has a 2,500-foot length of auxiliary lane been provided beyond the merge of one lane of the inlet, except where noted? [*U: Index 504.4(6)*] **N/A on this project**
44. At a diverging branch connection (See Figure 504.4), has a 2,500-foot length of auxiliary lane been provided in advance of the exit? [*U: Index 504.4(6)*] **N/A on this project**
45. Where the weaving distance between successive entrance and exit ramps is less than 2,000 feet (See Figure 504.2A), has an auxiliary lane been provided between these ramps? [Index 504.5] **N/A on this project**
46. Have the basic number of lanes been maintained through each local Interchange? [*U: Index 504.6*] **YES**
47. Where a reduction in mainline traffic volume is sufficient to warrant a decrease in the basic number of lanes, is the lane drop located beyond the influence of the interchange, at least ½ mile from nearest inlet or exit nose, and does the lane drop occur on the right lane on a tangent with a straight or sag profile? (See Index 504.6) **N/A on this project, lanes to not be dropped**
48. Has ramp metering been discussed with the District Traffic Unit? (See Index 504.3(2)) **NO**
49. Where multi-lane ramps are metered, is the lane drop taper past the meter limit line: **N/A on this project, no multi-lane off ramps**
- a. 50 to 1 or greater? (See Index 504.3(2)(c)) **N/A on this project**
- b. 30 to 1 or greater (depending on approach geometry and speed)? [*U: Index 504.3(2)(c)*] **N/A on this project**
- c. 15 to 1 or greater? [**B: Index 504.3(2)(c)**] **N/A on this project**
50. Have access rights been acquired along Interchange ramps to their junction with the nearest public road? At these junctions, does the access control extend at least 50 feet beyond the end of the curb return, ramp radius, or taper? [**B: Index 504.8**] **N/A on this project, no access rights needed**
51. For new construction, does the access control extend 100 feet beyond the end of curb return or ramp radius in urban areas and 300 feet in rural areas, or as far as necessary to ensure that entry onto the facility does not impair operational characteristics? [*U: Index 504.8*] **N/A on this project, not new construction.**

- Does freeway fencing, or equivalent access control, extend to the limit of legal access control on local streets at ramp termini? [*U: Index 701.2(1)*] **N/A on this project**
52. Have access rights been acquired on the opposite side of the local road from ramp terminals? [**B: Index 504.8**] **N/A on this project**

## 2.8 Utilities

1. Do the existing utility facilities that are to remain, or are to be relocated in access-controlled freeways and expressways have a formal exception granted from the Chief of the Headquarters Division of Design for any existing or proposed longitudinal or facility encroachments (for example: poles, aerial lines, manholes, vaults, pull boxes, etc.)? (See Project Development Procedures Manual - Chapter 17) **YES**
2. Do all utilities within the project limits comply with the “Utility Policy” (See Project Development Procedures Manual - Chapter 17)? If not, has a formal exception been granted from the Chief of the Headquarters Division of Design for variances to the Utility Policy? **YES**
3. Before a project can be certified as Ready to List (RTL) for advertising, the Project Engineer must certify that the project conforms to the “Utility Policy”; has the "Project Engineer's Certification of Utility Facilities" been completed? (See the Project Development Procedures Manual - Chapter 17) **YES**

## **Attachment O**

# **HQ Design PSR-PDS Scoping Checklist**

# Division of Engineering Services

## PSR-PDS Scoping Checklist

### Project Information

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District 04 County San Mateo Route 280 (Post Mile) 0.04 EA 04-1Q710  
Project ID#0148000320

Project Description: Alpine Road Corridor Improvement Project

Project Manager Prasanna Muthireddy Phone # (925) 398-4855

DES Project Liaison Engineer\* (PLE): xxxxxx

DES Special Funded Projects Liaison Engineer: xxxxx Phone #xxxxxx

DES Consultant Management Engineer: Phone #

\*The Project Liaison Engineer will provide assistance with the completion of this form.

### Project Scope

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DES acknowledges that scope is in development at this time. The Project Liaison Engineer is available to assist the District in determining the involvement of DES functional units. The intent of the checklist is to gather as much information as possible on the alternatives to accurately identify the involvement of DES.

Describe and identify in the following sections a general description of improvements anticipated as part of the project scope that will require DES functional unit involvement.

#### Check applicable boxes describing proposed scope of project.

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> New Expressway/Freeway on new alignment                     | <input checked="" type="checkbox"/> Other Roadway Realignment | <input type="checkbox"/> Widen Highway      |
| <input type="checkbox"/> Construct Interchange                                       | <input type="checkbox"/> Emergency/Storm Damage               | <input type="checkbox"/> Rockfall Project   |
| <input type="checkbox"/> Modify Interchange  | <input type="checkbox"/> Bridge Widening                      | <input type="checkbox"/> Left-turn Pocket   |
| <input type="checkbox"/> Bridge Replacement  | <input type="checkbox"/> Curve Correction                     | <input type="checkbox"/> Modify Slope       |
| (New alignment? <input type="checkbox"/> Yes <input type="checkbox"/> No)            | <input type="checkbox"/> Building Project                     | <input type="checkbox"/> Stabilize Subgrade |
| <input type="checkbox"/> Bridge Rehabilitation                                       | <input type="checkbox"/> Median Barrier Retrofit              | <input type="checkbox"/> Stabilize Roadway  |
| <input type="checkbox"/> New Bridge  | <input type="checkbox"/> Construct Passing Lane               | <input type="checkbox"/> Landslide/Slip-out |
| <input type="checkbox"/> Bridge Seismic Retrofit                                     | <input type="checkbox"/> Soundwall/Retaining Wall             | <input type="checkbox"/> Bridge Deck Rehab. |
| <input checked="" type="checkbox"/> Other Design: Explain: Bike and Pedestrian Trail | <input checked="" type="checkbox"/> Roadway Rehabilitation    | <input type="checkbox"/> Bridge Joint Seals |

Briefly describe proposed scope of DES involvement for all alternatives.  
(See PSR-PDS for proposed scope description for all alternatives)

Alpine Road Alternative 1: Signalized Intersection at the interchange ramps

Alpine Road Alternative 2: Roundabouts at the interchange ramps

## Project Schedule

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Project Milestones		Milestone Date (Month/Year)
PSR/PDS DOCUMENTATION	M380	08/2024
COMMUNITY OUTREACH	M800	11/2024
DEVELOP TEPA	M020	12/2024
DEVELOP PEAR	M020	04/2025
PID APPROVAL	M600	07/2025
PROGRAM PROJECT	M015	03/2025
PA/ED PREPERATION	M200	08/2025
PA/ED APPROVAL	M600	06/2027
PS&E	M380	03/2029
RIGHT-OF-WAY CERTIFICATION	M600	04/2029
BEGIN CONSTRUCTION	M800	07/2029

## Project Cost

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**For PSR (PDS) projects, the following section is to be used for EACH alternative, provided that the scope is significantly different.**

### Alpine Road Alternative #1, Signalized Intersection

<u>Project Cost Range (\$ 1000's)</u>		<u>Cost of Largest Structure (\$ 1000's)</u>
---------------------------------------	--	--

Roadway	\$	\$0
---------	----	-----

Structure**	\$0	
-------------	-----	--

Total	\$	**Structure	Cost
-------	----	-------------	------

Range to be provided by (check one)

Consultant  Structure Design Technical Liaison.

### Alpine Road Alternative#2, Roundabout

<u>Project Cost Range (\$ 1000's)</u>		<u>Cost of Largest Structure (\$ 1000's)</u>
---------------------------------------	--	--

Roadway	\$	\$
---------	----	----

Structure**	\$	
-------------	----	--

Total	\$	**Structure	Cost
-------	----	-------------	------

Range to be provided by (check one)

Consultant  Structure Design Technical Liaison.

## Project Scope Breakdown by DES Function

### Photogrammetry

Note: A Photogrammetry Service Request-PSR (PDS) must be completed and submitted to DES Photogrammetry by the District Photogrammetry Coordinator.

### Bridge Design Services (check applicable boxes)

#### Design by:

- Office of Structure Design
- Structure Maintenance Design
- Office of Structure Contract Management (Consultant Design Oversight)
- Office of Special Funded Projects (Consultant Design Oversight)

#### Bridge Information:

<input type="checkbox"/> New Bridge(s)	Number	Br. Name(s) & No(s).
<input type="checkbox"/> Bridge Replacement(s)	Number	Br. Name(s) & No(s).
<input type="checkbox"/> Bridge Widening(s)	Number	Br. Name(s) & No(s).
<input type="checkbox"/> New Bridge over water	Number	Br. Name(s) & No(s).
<input type="checkbox"/> Bridge Replacement over water	Number	Br. Name(s) & No(s).
<input type="checkbox"/> Bridge Widening over water	Number	Br. Name(s) & No(s).
<input type="checkbox"/> Bridge Rail Replacement(s)	Number	Br. Name(s) & No(s).
<input type="checkbox"/> Approach Slab	Number	Br. Name(s) & No(s).
<input type="checkbox"/> Bridge with Railroad Involved	Number	Br. Name(s) & No(s).
<input type="checkbox"/> Bridge w/ Scour Analysis	Number	Br. Name(s) & No(s).
<input type="checkbox"/> Bridge w/ Special Design or Retrofit	Number	Br. Name(s) & No(s).

### Other DES functional units required for Structure Work

- Structure Hydraulics (include if bridge is over or adjacent to water)
- Preliminary Investigations (Structure Foundation Plan)
- Geotechnical Services (Structure Foundations)

### Wall Design Data for Structure Design & Geotechnical Services

<input type="checkbox"/> Soundwall(s) Number	Est. Max. Ht Est. Length	<input type="checkbox"/> Standard Design	<input type="checkbox"/> Special Design
<input type="checkbox"/> Ret. walls(s) Number	Est. Max. Ht Est. Length	<input type="checkbox"/> Standard Design	<input type="checkbox"/> Special Design
<input type="checkbox"/> MSE Wall(s) Number	Est. Max. Ht Est. Length	<input type="checkbox"/> Standard Design	<input type="checkbox"/> Special Design

### Geotechnical Services

Is Oversight for consultant prepared geotechnical reports required?

- Yes       No

Has the Geotechnical Design Liaison or other geotechnical person been contacted?

- Yes       No      If yes, who?

<b>Terrain</b>	<input checked="" type="checkbox"/> Flat	<input type="checkbox"/> Rolling	<input type="checkbox"/> Mountainous	
<b>Cuts:</b>	Est. Max Height (ft)	Est. Volume (yd <sup>3</sup> ):	<input type="checkbox"/> New	<input type="checkbox"/> Widen
<b>Fills:</b>	Est. Max Height (ft)	Est. Volume (yd <sup>3</sup> ):	<input type="checkbox"/> New	<input type="checkbox"/> Widen

**Sign Structures**

<input type="checkbox"/> Overhead Sign Foundations	Number
<input type="checkbox"/> Changeable Message Sign Foundations	Number

**Other:**

- Special Studies (slope stability, rockfall, erosion, seepage, ground water, settlement, liquefaction, slipout repair, rock slope, etc.) Explain
- Existing Maintenance Problems: Explain:

**Technical Specialist Design****Anticipated insertable plan sheet(s) check below:**

<input type="checkbox"/> Culvert(s)	Number
<input type="checkbox"/> Barrier(s)	Number
<input checked="" type="checkbox"/> Signs and Overhead Structures	Number
<input type="checkbox"/> Other Design:	Explain:

**Transportation Architecture Design**

<input type="checkbox"/> Design New Building(s)	Explain:
<input type="checkbox"/> Remodel Existing Buildings(s)	Explain:
<input type="checkbox"/> Bridge Aesthetics Evaluation	Explain:
<input type="checkbox"/> Build scale model	Explain:
<input type="checkbox"/> Other Aesthetics work	Explain:

**Electrical, Mechanical, Water & Wastewater Design**

<input type="checkbox"/> Pumping Plants	Explain:
<input type="checkbox"/> Movable bridge, drawbridge	Explain:
<input checked="" type="checkbox"/> Lighting control system for facilities	Explain:
<input type="checkbox"/> Sanitary Systems	Explain:

**Materials Engineering & Testing Services****Pavement**

<input type="checkbox"/> Rigid	<input type="checkbox"/> Flexible	Average Grade	Average Superelevation
<input type="checkbox"/> Deflection Study Required		No. of Locations	Lane/miles to be tested

**Consultation and Inspection**

<input checked="" type="checkbox"/> Loop detectors	<input checked="" type="checkbox"/> Signal & Lighting Products	<input checked="" type="checkbox"/> Changeable Message Signs, Closed Circuit TV
<input type="checkbox"/> Concrete Bridge	<input type="checkbox"/> Steel Bridge	

**Materials Engineering & Testing Services (Continued)****Corrosion Tests**

<input type="checkbox"/> Soil	<input type="checkbox"/> Concrete	<input type="checkbox"/> Cathodic Protection System
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**Other**

<input type="checkbox"/> Special Products:	Explain
--	---------

## **Additional Studies, Investigations or Research from DES**

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Identify additional studies or investigations that may be required from DES Functional Units.

**Prepared By: Prasanna Muthireddy Date 4/23/2025**

Please submit this form to DES, to the attention of the Project Liaison Engineer, Office of Project Delivery, in the subdivision of Program/Project & Resource Management.

DES will provide a Structure Cost Estimate Range, for each alternative and a resource summary estimate to be included in the project workplan.

# Design Scoping Index

Attach the project location map to index to show the location of all design improvements.

Today's Date:	04/25/2025
Status (Initial, Update):	

**General Information:**

District:	County:	Route:	Post Mile	Project Number
04	SM	280	R.04	04-1Q710

Project Manager	Liliana Price	Phone #	
Task Manager	Fitsum Worrede	Phone #	
Project Engineer	Tim Cheng	Phone #	
Design Functional Manager	Prasanna Muthireddy	Phone #	

General Project Description:	Alpine Road is a minor arterial roadway that runs south to north from Portola Valley to Menlo Park. Throughout the corridor, Alpine Road contains one thru lane heading north and one thru lane heading south, with a striped median that contains left turn lanes and deceleration lanes at the intersections along the corridor. At the near middle of the corridor is the Interstate 280 interchanges, with on and off ramps for the highway. There are two thru lanes in each direction in the Interstate limits and in Caltrans R/W. The posted speed limit is 35 mph and the design speed is assumed to be 40 mph. Alpine Road operates with free movements along the corridor, with the side streets being stop controlled as access points.
------------------------------	---

<p>Project Need:</p>	<ul style="list-style-type: none"> <li>• The mobility and safety performance of Alpine corridor is considered deficient due to it being a heavily travelled corridor. Currently, the Alpine corridor serves more than 25,000 vehicles per day on typical weekdays, and about 15,000-18,000 vehicles per day on typical weekends, and operates at deficient levels during peak traffic periods, resulting in congestion and lengthy queuing. 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. 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 population.</li> <li>• SamTrans Routes 86 and 87 operate on the Alpine Road corridor and provide transit to local schools and other destinations. Like autos, buses utilizing the corridor have unpredictable travel times due to the significant congestion on Alpine Road, reducing the desirability of transit.</li> <li>• The primary pedestrian facility along the study corridor is the Alpine Road Trail, a path which roughly parallels the east side of Alpine Road. In some locations, the pedestrian facilities are more comparable 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. 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.</li> <li>• The existing facilities also result in poor connectivity to existing housing, shopping, dining, and recreation facilities on both sides of the Alpine corridor. Pedestrians have difficulty crossing the Alpine corridor since there are not enough crossings within the project limits and no direct crossings to major commercial or residential facilities.</li> <li>• 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.</li> </ul>
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Project Purpose:	<p>The purpose of the Project is to:</p> <ul style="list-style-type: none"> <li>• Improve bicycle and pedestrian access and connectivity to transit, housing, commercial centers, and other destinations within the project limits</li> <li>• Improve conditions and enhance safety for pedestrians and bicyclists accessing the Alpine corridor</li> <li>• Improve traffic operations by improving access to and from Alpine Road</li> <li>• Improve access to transit facilities within the Alpine corridor</li> </ul>
------------------	--

Item	Considerations	Yes/No/ Specify	Comments (summarize pertinent information, assumptions and reference location of detailed information):
1. Project Setting (refer to Planning Scoping Checklist)	Rural or Urban?	Urban	
	Current Land Uses: (e.g., industrial, light industry, commercial, agricultural residential etc).	Residential	
	Adjacent Land Uses:		
	Existing Landscaping:	Yes	
	Designated or Eligible Scenic Highway	No	

The following pages are to be used for each alternative provided that the scope is significantly different. If a route has been adopted as a freeway, a decision must be made as to whether or not the project will address improvements to the existing traversable highway or move to construction of a freeway facility.

Item	Considerations	Yes/No/Specify	Comments (summarize pertinent information, assumptions and reference location of detailed information):	
Design Concept and Route Matters	1.	Design Concept?		
		Freeway/Expressway/Conventional Highway	Expressway	4-Lane Minor Arterial
		Mixed highway and transit	No	
		Mixed highway and rail	No	
		Urban	Yes	
		Other	N/A	
	2.	Existing Route Adoption Date		
	3.	New Route Adoption Proposed?		
	4.	Existing Freeway Agreement Date		
	5.	New Freeway Agreement Proposed?		
6.	Public Road Connection Proposed?	Modified	Existing conditions modified at each interchange. No new connections.	
Design Criteria	1.	Design speed for highway facilities within the project limit	40-45	40 outside of Caltrans R/W and 45 inside of Caltrans R/W
		mi/hr?	Yes	
	2.	Design Period: (10 yr/15 yr/20 yr)	20 year	
		Construction Year	2028	
		Design Year	2028	
	3.	Design Capacity - Level of Service to be maintained over the design period:	TBD	
		Mainline	Yes	
		Ramp	Yes	
		Local Street	Yes	
	4.	Weaving Sections	Yes	
		Design Vehicle Selection	Yes	Design Vehicle will be determined based off of
		STAA	N/A	
		California	N/A	
Bus		Yes		

Forecasted Average Daily Traffic volumes	<u>TBD</u>
Percent truck volume	<u>TBD%</u>

## Proposed Roadbed and Structure Widths

State Highway	Roadbed Width			Structure Width		
	Existing	Proposed	Standard	Existing	Proposed	Standard
Lane widths/#						
Left Shoulder						
Right Shoulder						
Median Width						
Bicycle lane						
Sidewalk						
Planting strip						
<b>Local Streets</b>						
Lane widths/#						
Left Shoulder						
Right Shoulder						
Median Width						
Bicycle lane						
Sidewalk						
Planting strip						

Item	Considerations		Yes/No/ Specify	Comments (summarize pertinent information, assumptions and reference location of detailed information):
Roadway Design Scoping	1. Mainline Operations	Main lane highway widening?	No	
		Existing pavement to be rehabilitated with Asphalt Concrete/Rubberized AC/PCC?	Yes	
		Widen existing facility from ___ lanes to ___ lanes.	No	
		Local street structures to span ___ lanes.	No	
		Curb extensions	No	
		Shoulder improvements		
		Bicycle lanes	Yes	
		Pedestrian refuge islands	No	
		Sidewalks	Yes	
		Right of Way acquisition required for ___ lanes.	TBD	
		Upgrade existing facility to: Expressway/Freeway/Controlled Access Highway/ Traversable Highway Standards?	N/A	
		Improve Vertical Clearance	N/A	
		Adequate Falsework Clearance	N/A	
		Traffic calming features	Yes	

Item	Considerations		Yes/No/Specify	Comments (summarize pertinent information, assumptions and reference location of detailed information):
Roadway Design Scoping	2. Ramp/Street Intersection Improvements	New Signals?	Yes	Alternative 1 include new signals
		Modify Existing Signals?		
		Right Turn Lanes	Yes	Removing free right turns at the I-280 off-ramps.
		Widening for Localized Through lanes?		
		Merging Lanes?		
		Deceleration/ Acceleration lanes?	Yes	
		Left Turn Lanes?	N/A	
		>300 VPH Left Turn (Requires Double Left Turn Lane)		
		Interchange Spacing?	No/Yes	Depending on the alternative
		Ramps Intersect Local Street < 4% grade?	N/A	
		Intersection Spacing?	No/Yes	Depnding on the alternative
		Exit Ramps >1,500 VPH (Requires two lane exit)		
		Single lane ramps exceeding 1000' widened to Two lanes	N/A	
		Curb Ramps?	Yes	
		Pedestrian Facilities?	Yes	Improvements to sidewalk, redecing etrances at Wildwood Ln to improve visibility, installing parking at Piers Lane, improving bus stop across Wildwood Ln and adding a pedestrian crossing to that newly improved bus stop.
	Other?			
Operational Improvements	Truck Climbing Lane	Sustained Grade exceeding 2% and Total Rise Exceeds 50'?	N/A	
		Other?	N/A	
	Auxiliary Lanes	2000' between Successive On-Ramps?	N/A	
		Two lane Exit Ramps have 1300' Auxiliary Lane?	N/A	
		Weaving < 2000' between off-ramp and on-ramp?	N/A	
	Other?	N/A		

Item	Considerations	Yes/No/ Specify	Comments (summarize pertinent information, assumptions and reference location of detailed information):
Right of Way Access Control	Existing access control extends at least 50 ft beyond end of curb return, radius or taper?		
	New construction access control extends at least 100' (urban areas) or 300' (rural areas) beyond end of curb returns, radius or taper?		
	Other?		
Highway Planting and Irrigation	Clearing and Grubbing?		
	Relocate Existing Irrigation Facilities? Highway Planting and Irrigation (including median and roadside)		
Roadside Management	Vegetation control treatments (road edge, guardrails, signs, drainage facilities, miscellaneous pavement narrow areas, etc.)		
	Modernization and clustering of facilities and hardware (removing and replacing other items), gore area pavement		
	Rehabilitate gore area pavement and pavement beyond gore areas (remove and replace miscellaneous pavement and curbs		
	Contour grading, slope rounding, stepped slopes and topsoil reapplication		
	Side slopes/embankment slope		
Safety	Off-Freeway Access (gate, access road, and stairways)		
	Maintenance Vehicle Pull-Out		
	Adequate safety working conditions		
	Relocate roadside facilities/features (cabinets, poles, pull boxes and vaults) away from traffic		
Hydraulics/ Stormwater (Refer to the Stormwater data sheet)	Erosion Control?		
	Drainage?		
	Slope Design?		
Structures (Refer to Structures Scoping Checklist or APS)	New Bridge? Providing public access for recreational purposes must be fully considered for new bridges over navigable rivers.		
	Bridge Rehabilitation?		
	Retaining Wall		
	Bicycle or Pedestrian Overcrossing/Undercrossing		
	Other		
	On STRAIN list for:		
Other	Class I Bikeway (bicycle path)		

## **Attachment P**

# **Vehicles-Miles Traveled Decision Document (VMTDD)**

## Vehicle-Miles Traveled Decision Document (VMTDD)

Applicability: This form is required for PIDs prepared by Caltrans or partners for transportation projects with one or more alternatives that increase capacity and generate induced demand on the State Highway System (SHS) or within the SHS right-of-way, regardless of lead agency. It is not required for purely active transportation and transit projects. Most SHOPP projects do not require a VMTDD, however Districts are advised to carefully examine projects that have the potential to increase capacity, including those that combine SHOPP & non-SHOPP funding. Attachment A provides some examples of the types of SHOPP projects that could require a VMTDD.

If the project is not screened, upload the form as a Word file to [Smartsheet](#) for HQ review, as applicable. Upon review and agreement, obtain the required signatures under Approval Recommended and attach to the PID.

District/County/Route/PM: **04-SM-280/PM 0.04**

Project Name: **Alpine Road Corridor Improvement Project**

EA/EFIS Number: **AE 1Q710/0418000320**

- 1) Are all project alternatives screened as not likely to induce travel per Section 5.1.1 of the Transportation Analysis Under CEQA (TAC)? While most SHOPP projects do not need to complete a VMTDD, please refer to Attachment A for examples of SHOPP activities that **may** require a VMTDD and/or further justification for screening. HQ consultation may also be requested if necessary. If available, please provide detail of whether the project may facilitate a future capacity-increasing project within the next 20 years.

NO - Proceed to Question 2.

YES – Cite screening criterion(ia):

**No additional roadway capacity is added for this proposed project — primarily, improvements focus on incorporating complete street features, improving bike/ped safety and circulation at on ramp intersections, local and collector roads in rural areas, including:**

- **Rehabilitation and safety projects to improve the existing condition of transportation assets.**
- **Installation of roundabouts.**
- **Addition of enhanced bike facilities on existing streets within the public R/W**

Stop here. The project is exempt from further VMT evaluation. Obtain district-level signatures and attach to the Project Initiation Document (PID). No headquarters concurrence is needed.

- 2) Do any of the project alternatives add lane-miles (mainline or aux lanes greater than 1 mile) to the State Highway System?

- NO - Continue to Question 3.
- YES – Provide estimate of new lane-miles for all alternatives and proceed to Question 4.

Alternative Number	Alternative Name	Lane-miles Added
1		
2		
3		
4		
5		
6		

3) Do any of the proposed alternatives add other capacity to the State Highway System (e.g., a new or widened interchange)?

- NO – Proceed to Question 4.
- YES – Describe and proceed to Question 4.

Alternative Number	Alternative Name	Capacity Added
1		
2		
3		
4		
5		
6		

4) Has induced VMT been estimated, as prescribed in Transportation Analysis Framework (TAF), Transportation Analysis Under CEQA (TAC), or other methods, for the project alternatives?

- NO – Proceed to Question 5.
- YES – Provide estimates and the methods from which they were obtained, and proceed to Question 5.

Alternative Number	Alternative Name	VMT Estimate	Estimation Method
1			
2			
3			
4			
5			
6			

5) Have VMT-reducing project elements or mitigation measures been identified?

NO – Proceed to Question 6

YES – Describe and proceed to Question 6:

6) What is the budget for VMT mitigation? Provide the dollar figure and rationale.

7) Provide estimated completion dates and points of contacts for the following technical studies to be produced in PA&ED and submitted to HQ.\*

<b>Document</b>	<b>Contact name</b>	<b>Contact e-mail</b>	<b>Scheduled date</b>
Induced travel (VMT) methodology and results			
Mitigation plan			
Draft environmental document			
Final environmental document			

\*Submissions to HQ are not required for projects in rural, non-MSA counties as defined in Table 3 of the TAF.

**To Be Completed by HQ**

The Director's Office of Sustainability agrees with the district that the project may be screened as not likely to induce VMT under the following project types, per Section 5.1.1 (ii) of the Transportation Analysis Under CEQA (TAC pp. 13-15):

- Rehabilitation and safety projects to improve the existing condition of transportation assets.
- Installation of roundabouts.
- Addition of enhanced bike facilities on existing streets within the public R/W

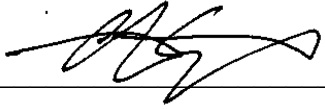
Please note these comments are based on an initial understanding of the project information provided. Unless the scope of the project changes, no further induced VMT reviews are needed. Please obtain District-level signatures only on the VMTDD and attach the VMTDD to the PID. A signature from the Sustainability Deputy Director is not required.

**Recommendation(s) to Project Development Teams (PDTs), Districts, and/or Partners**

N/A

Project screened as unlikely to induce VMT  YES  NO

Approved by:



\_\_\_\_\_  
Christopher Caputo  
Deputy District Director, Environmental

5/27/2025

\_\_\_\_\_  
Date



\_\_\_\_\_  
Cameron Oakes  
Deputy District Director,  
Transportation Planning and Local Assistance

08/21/2025

\_\_\_\_\_  
Date

David Ambuehl  
David Ambuehl (Aug 27, 2025 16:00:29 PDT)

\_\_\_\_\_  
David Ambuehl  
Acting District Director

08/27/2025

\_\_\_\_\_  
Date

**Attachment A**

Most SHOPP projects do not require a VMTDD, however, the table below lists examples of SHOPP activities that **could** trigger the need for one and/or further justification for screening.

<b>SHOPP ID</b>	<b>Activity Category</b>	<b>Activity</b>
A05	Bridge	Bridge Widening (201.110, .322)
B21	Pavement	Concrete Pavement Major Rehab
B22		Asphalt Pavement Major Rehab
B25		Asphalt Pavement Minor Rehab (CAPM)
B26		Concrete Pavement Minor Rehab (CAPM)
E20	Safety, Signs, & Lighting	Widen Shoulders*
F08	Mobility	Widen Roadway
F09	Mobility	Truck Climbing Lane (201.310)**
F10	Mobility	Acceleration/Deceleration Lane (201.310)***
F12	Mobility	Intersection Improvements (201.310)
F19	Mobility	Shoulders – New and Widening*
F36	Mobility	Auxiliary Lanes (201.310)***

\*Shoulders of 10' or more may require a VMTDD. Shoulders not used as current or future traveled way are generally screened under Section 5.1.1 of the TAC.

\*\*Truck climbing lanes are screened under Section 5.1.1 of the TAC only in rural areas that do not increase overall vehicle capacity along the corridor.

\*\*\*Auxiliary lane and acceleration/deceleration lane additions of less than one mile (5,280 feet) in length designed to improve roadway safety are generally screened under Section 5.1.1 of the TAC.

**Attachment Q**

**Preliminary Environmental Analysis  
Report (PEAR)**

## PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT

### 1. Project Information

<b>DIST-CO-RTE:</b> 04-SM-280	<b>PM/PM:</b> PM 0.04
<b>EA:</b> 1Q710	<b>EFIS Project ID:</b> 0418000320
<b>Project Title:</b> Alpine Road Corridor Improvement Project	
<b>Project Manager:</b> Fitsum Worrede, Caltrans	<b>Phone:</b> (510)-807-1688
<b>Project Engineer:</b> Kelsey Nozuka	<b>Phone:</b> (510)-549-6926
<b>Environmental Office Chief/Manager:</b> John Gretsches-Seal	<b>Phone:</b> (510) 549-6091
<b>PEAR Preparer:</b> Audrey Zagazeta, Circlepoint	<b>Phone:</b> (408) 715-1503

### 2. Project Description

San Mateo County, in cooperation with the San Mateo County Transportation Agency (SMCTA) and Caltrans proposes the Alpine Road Corridor Improvement Project (project) located in San Mateo County at Alpine Road interchange on Interstate – 280 (I280). The project proposes measures to improve multimodal access, mobility, circulation, and enhance safety along Alpine Road and at the I-280 interchange.

The full project extends from south of La Mesa Drive on Alpine Road to North of Stowe Lane on Alpine Road. However, this Preliminary Environmental Analysis Report (PEAR) encompasses the portion of the project that is within Caltrans right-of-way (ROW), between the I-280 southbound and northbound ramp intersections. The project is anticipated to include the following elements within Caltrans ROW:

- Improve the existing intersection operations at I-280 ramps by replacing the existing side-street-stop control and all-way-stop control with either signals or roundabouts as the intersection control.
- Replace free right turns at I-280 ramps with controlled and slow turning movements.
- Improve existing bicycle and trail facilities where applicable to provide a continuous and low stress bicycle and pedestrian corridor.
- Provide high-visibility crosswalks at intersections.
- Install necessary signage and pavement markings to implement the above improvements

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

## Purpose and Need

### *Purpose*

The purpose of the project is to:

- Improve bicycle and pedestrian access, safety and connectivity to transit, housing, commercial centers, and other destinations within the project limits
- Improve intersection operations along Alpine Road within the project limits
- Improve access to Alpine Road from the side streets.

### *Need*

The performance of the Alpine Road corridor is considered deficient due to it being a heavily travelled corridor. Currently, the Alpine Road corridor serves more than 25,000 vehicles per day on typical weekdays, and about 15,000-18,000 vehicles per day on typical weekends, and operates at deficient levels during peak traffic periods, resulting in congestion and lengthy queuing. 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. Community residents have expressed concern about the difficulty of turning out of driveways and unsignalized side-streets onto Alpine Road. According to collision data from the Statewide Integrated Traffic Records System (SWITRS) from 2017-2022 there was a total of 72 collisions with 18 broadside collisions on the Alpine Road corridor.<sup>1</sup> Broadside collisions typically occur when a driver makes a left or right turn in front of oncoming traffic, or when a driver runs a red light or a stop sign.

SamTrans Routes 86 and 87 operate on the Alpine Road corridor and provide transit to local schools and other destinations. Due to current congestion and traffic patterns, public transit has become a less desirable mode of transit due to the unpredictable travel times.

The primary pedestrian facility along the study corridor is the Alpine Road Trail, which roughly parallels the east side of Alpine Road. High speeds along the corridor contribute to pedestrian discomfort.

### *Outside Caltrans Right-of-Way:*

In some locations along the corridor that are outside Caltrans ROW, the Alpine Road trail provides little to no separation between pedestrians and vehicle traffic.

The existing facilities also result in poor connectivity to existing housing, shopping, dining, and recreation facilities on both sides of the Alpine Road corridor. Pedestrians

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<sup>1</sup> University of California Berkley. 2022. Transportation Injury Mapping System (TIMS). SWITRS Query & Map. Available at: <https://tims.berkeley.edu/tools/query/index.php?clear=true>. Accessed December 2024.

have difficulty crossing the Alpine Road corridor since there are not enough crossings within the project limits and no direct crossings to major commercial or residential facilities.

Residents have also expressed concerns about drivers speeding in 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.

## **Build Alternatives**

Two Build Alternatives and a no build alternative are being evaluated to determine their ability to satisfy the project's purpose and need.

### *No Build Alternative*

Under the No Build Alternative, the existing Alpine Road corridor would remain unchanged, except for existing planned and programmed improvements to I-280, and development in unincorporated San Mateo County. Under the No Build Alternative, existing traffic conditions along the Alpine Road corridor would worsen as volumes increase due to increased nearby employment growth and hazardous conditions would continue to be present for bicyclists and pedestrians. The No Build Alternative represents the baseline alternative and offers a basis for the analysis and evaluation of the two Build Alternatives. The No Build Alternative does not meet the Purpose and Need.

### *Build Alternative 1*

Build Alternative 1 would eliminate free right turns at the I-280 off ramp approaches to Alpine Road, while also improving intersection operations at the I-280 ramps by installing traffic signals at the freeway on/off ramps. This Build Alternative would evaluate upgrading to Class IV bikeway along southbound Alpine Road in the interchange zone, with the Class IV bikeway transitioning to a buffered Class II bike lane beyond the interchange zone.

### *Outside Caltrans Right-of-Way:*

Build Alternative 1 would install single-lane traffic signals with controlled pedestrian and bicycle crossing at the Alpine Road/La Mesa Drive and Alpine Road/La Cuesta Drive intersections. The existing Class II bike lanes between these intersections would be upgraded, adding buffers and/or vertical separation where feasible.

Build Alternative 1 would also improve side street access to the Alpine Road corridor and include roadway improvements that promote traffic calming within the corridor. Existing parking at Piers Lane and access from Wildwood Lane would be evaluated for improvements that aid in increased visibility for vehicles entering or exiting Alpine Road. The existing bus stop across from Wildwood Lane would also be improved and a new pedestrian crossing to the bus stop would be evaluated.

An illustration of Build Alternative 1 can be found in Figure 1.

*Build Alternative 2*

Build Alternative 2 would include the same improvements as Build Alternative 1 but would install roundabouts rather than traffic signals at the I-280 on/off ramps.

*Outside Caltrans Right of Way:*

Build Alternative 2 would install roundabouts at the Alpine Road/La Mesa Drive and Alpine Road/La Cuesta Drive intersections.

An illustration of Build Alternative 2 can be found in Figure 2.

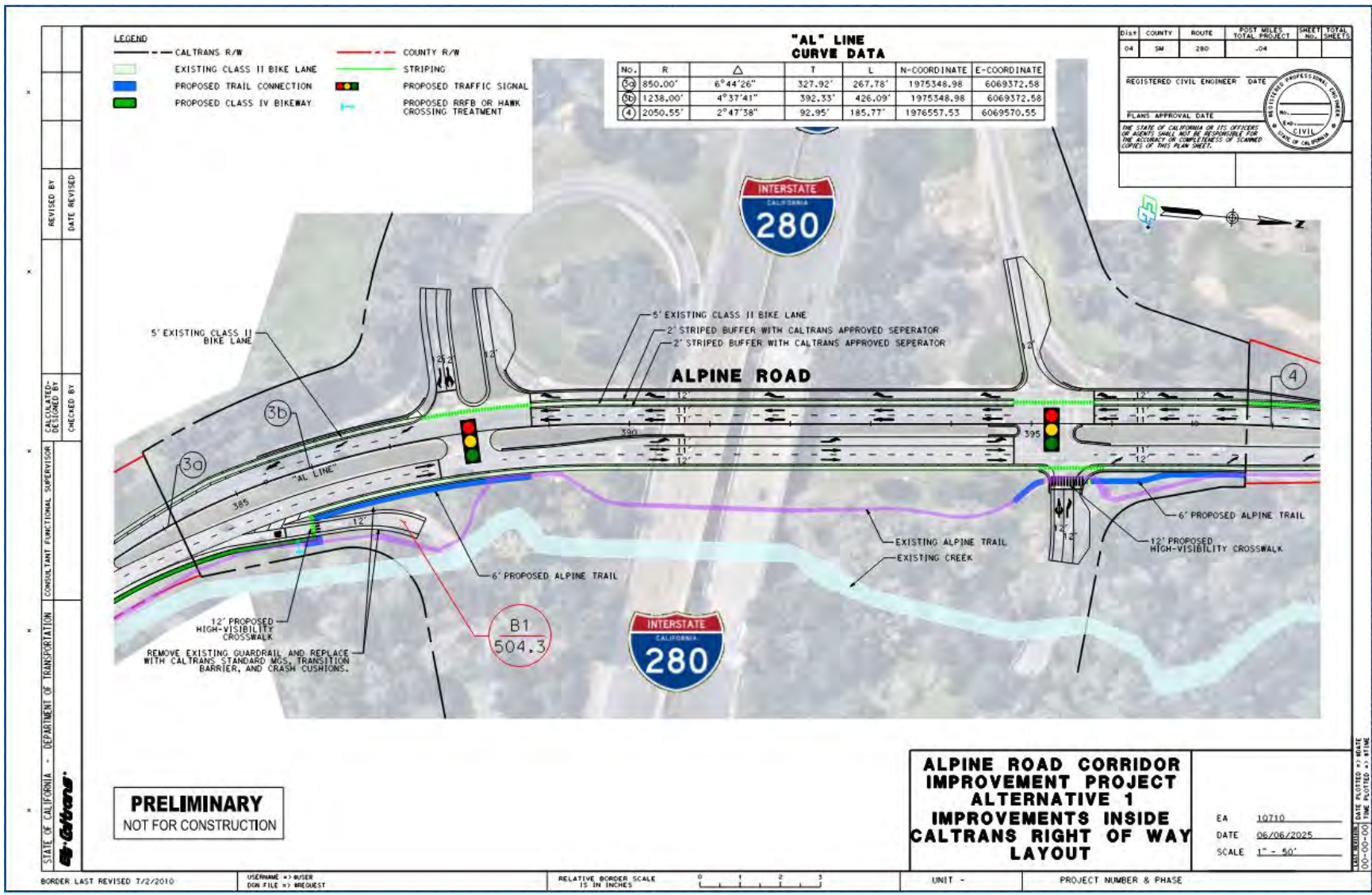


Figure 1 Build Alternative 1

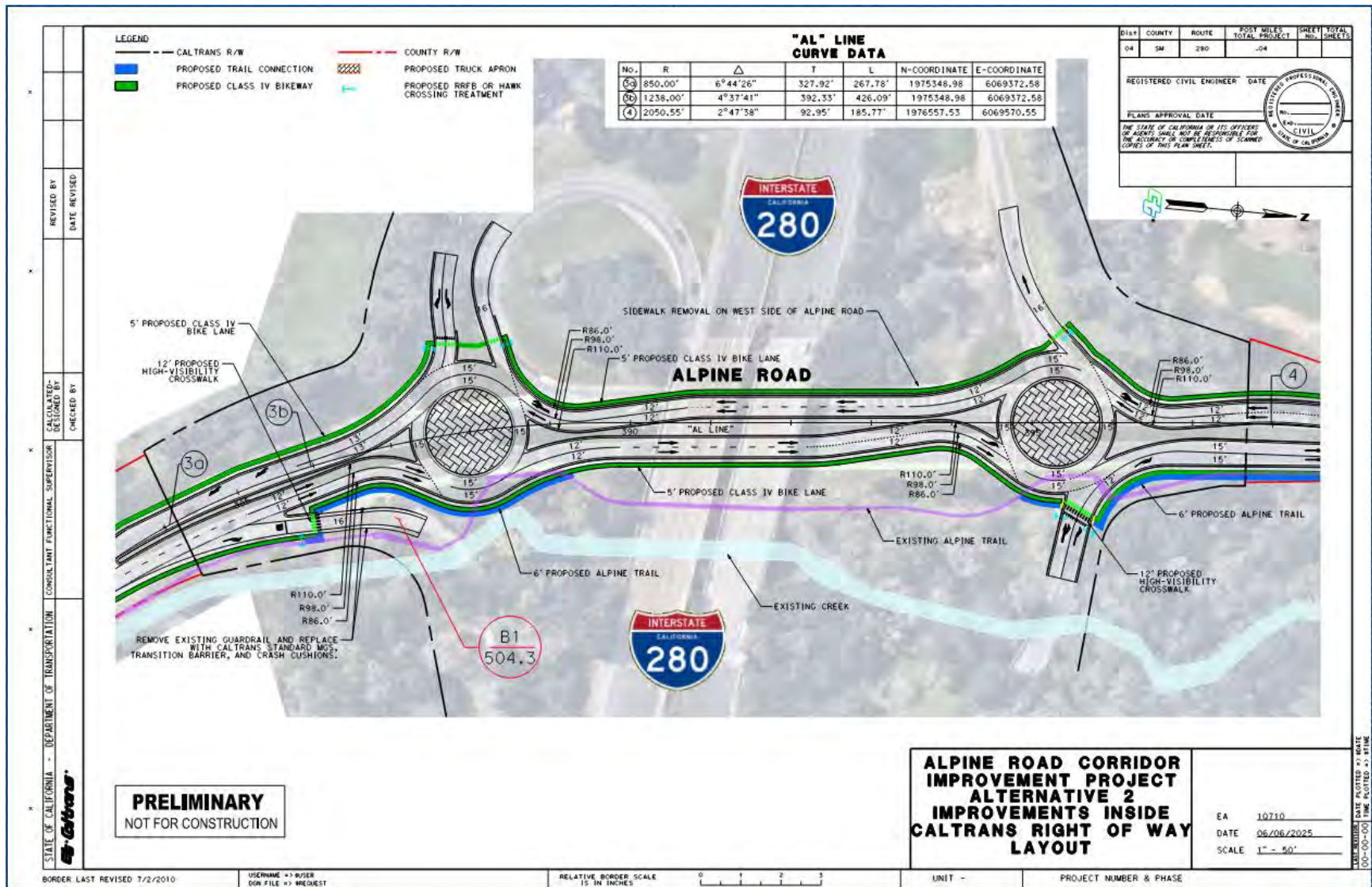


Figure 2 Build Alternative 2



### **3. Anticipated Environmental Approval**

#### **CEQA (choose one):**

- Exemption
  - Statutory
  - Categorical
  - Common Sense
- Initial Study or Focused Initial Study with proposed Negative Declaration (ND) or Mitigated ND
- Environmental Impact Report

#### **NEPA (choose one):**

- Categorical Exclusion
- Environmental Assessment with Finding of No Significant Impact
  - Routine
  - Complex
- Environmental Impact Statement

**CEQA Lead Agency** (if determined): San Mateo County

**Estimated length of time (months) to obtain environmental approval:** 24 months

### **4. Special Environmental Considerations**

The Build Alternatives would have the potential to impact sensitive environmental resources, as described below.

The character of the project corridor is rural and is primarily dominated by transportation land uses as well as commercial and residential development to the east and west of Alpine Road. Potential effects of the Build Alternatives are anticipated to include construction-period changes to traffic flow, noise and vibration, and pollutant emissions from construction equipment.

Additionally, effects to potential undocumented cultural resources could occur during construction, if such resources are present. The potential to encounter these resources is high and the project would require excavation activities at depths up to 12 feet (see discussion in **Section 8.6, Cultural Resources**). Therefore, there is a possibility for undocumented Native American and archaeological resources to be encountered during construction.

Portions of the project alignment are located adjacent to areas with a one percent or greater chance of flooding. Changes in impervious surfaces or the design of Alpine Road could impact floodplains where present along the project alignment.

The project site is also located adjacent to Los Trancos Creek. Under Build Alternative 1, construction of the project would require tree removal which could impact migratory and nesting birds. Additionally, project construction could result in indirect effects to creek habitat from runoff.

Under Build Alternative 2, installation of the roundabouts may require the realignment of Los Trancos Creek including localized dewatering during construction. This could result in effects to water quality as well as biological resources if it is determined that the creek provides habitat for special-status species (see discussions in **Section 8.8 Water Quality and Storm Water Runoff** and **Section 8.15 Biological Resources**).

### ***5. Anticipated Environmental Commitments***

Impacts on environmentally sensitive resources could potentially occur as a result of implementing the project. However, it is anticipated that, based on existing conditions and the layout of the Build Alternatives, impacts would be avoided and minimized with adherence to Caltrans Best Management Practices (BMPs) and standard avoidance and minimization measures (AMMs). As currently designed, neither Build Alternatives includes elements that would induce vehicle miles traveled (VMT) and would promote VMT reductions through the improvement of bike lanes and pedestrian facilities along Alpine Road. Accordingly, it is anticipated that an Initial Statement/Mitigated Negative Declaration would be prepared. The NEPA Class of Action would be Class III and an Environmental Assessment (EA) would be prepared for the project.

The purpose and need for the project are well defined and demonstrate independent utility and logical termini. No individual Section 4(f) determination or Section 7 consultation is anticipated. The project is not anticipated to result in significant visual resource impacts as the proposed structures would replace existing structures of similar mass and height.

It is expected that the environmental technical reports and the preparation of an Initial Study/EA document would take up to 24 months in order to prepare and process the document for final approval and would also include time for review by the environmental division staff within Caltrans. These timelines do not include permitting by federal or state resource agencies, if required.

### ***6. Permits and Approvals***

It is anticipated that the following regulatory permits/approvals would be required for the project.

- National Pollutant Discharge Elimination System (NPDES) Statewide Storm Water Construction General Permit.
- State Historic Preservation Office (SHPO) Section 106 Concurrence
- County of San Mateo Significant/Heritage Tree Removal Permit
- San Mateo County ROW Acquisition
- California Department of Fish and Wildlife Section 1602 Lake and Streambed Alteration Agreement
- U.S Army Corp of Engineers Section 404 Permit
- San Francisco Regional Water Quality Board Section 401 Water Quality Certification Permit

Additionally, the following studies may be required (See Attachment A):

*Air Quality:* It is anticipated that the project would be required to prepare an Air Quality Report (AQR). The AQR would be prepared consistent with the requirements specified in the Caltrans Standard Environmental Reference (SER) to assess whether the project would result in air quality impacts as a result of project implementation. As discussed below, the project would also be required to obtain concurrence from the Metropolitan Transportation Commission (MTC) as to whether the project is a Project of Air Quality Concern. The AQR would also include a construction and operation green house gas (GHG) emissions analysis.

*Energy:* The project would be required to prepare either an Energy Analysis Report or a memo to file which would include a qualitative assessment of the potential energy impacts of the project during construction and operation.

*Community Impacts:* A Community Impact Assessment (CIA) Memo is anticipated to be required and will be prepared consistent with the Caltrans SER to assess if there will be community impacts from the project on communities and neighborhoods. As the project would improve multimodal connectivity, permanent impacts to communities and neighborhoods are not anticipated.

The CIA Memo would also evaluate potential Section 4(f) impacts. It is anticipated that a no-use determination would be made for both Build Alternatives (this includes properties for which it is has been determined that Section 4(f) does not apply and properties for which Section 4(f) does apply but there is no use).

*Visual/Aesthetics:* The project has the potential to introduce visual or aesthetic changes, specifically under Build Alternative 2. As stated in **Section 2. Project Description**, this Build Alternative would include the installation of roundabouts which would have a relatively large footprint and would alter the visual landscape of the project site compared to existing conditions. Build Alternative 1 would not have the potential to introduce visual and aesthetic changes since it would include the installation of stop lights which have a relatively small footprint and can blend into the existing visual landscape. Regardless of the Build Alternative, the latest Caltrans Visual Impact Assessment (VIA) Questionnaire tool would be prepared to determine the appropriate type of VIA required, consistent with the Caltrans SER. It is anticipated that a VIA Memorandum will be prepared for the project.

*Cultural Resources:* Both Build Alternatives have the potential to impact undocumented cultural resources. In fulfillment of the National Historic Preservation Act (NHPA) requirements under Section 106, an Area of Potential Effect (APE) will be developed for the project encompassing both the temporary and permanent project footprint. Additionally, a Historic Property Survey Report (HPSR) and Archaeological Survey Report (ASR) would be prepared. The ASR will determine if additional investigations are necessary, and if consultation with the State Historic Preservation Officer (SHPO) is needed in accordance with Section 106 of the NHPA and the programmatic agreement (PA).

*Water Quality Floodplain:* The locations of the two Build Alternatives are within 0.5 miles of areas designated by the Federal Emergency Management Agency (FEMA) as Zone A. Zone A designations require, at a minimum, a Location Hydraulic Study (LHS) may be prepared consistent with the Caltrans SER and the latest Caltrans Water Quality Assessment Report Template and Caltrans LHS template and Floodplain forms.

Both Build Alternatives are likely to utilize Caltrans' NPDES permit during construction. The NPDES permit includes measures that would be taken by the project to reduce or avoid runoff that would affect local storm water quality. The NPDES permit would require preparation and adoption of a Storm Water Pollution Prevention Program (SWPPP). Additionally, the project would be required to file a Notice of Intent (NOI) to be covered under the State NPDES General Construction Permit for discharges of storm water associated with construction activity.

*Hazardous Waste/Materials:* An Initial Site Assessment (ISA) would be required to identify the level of potential risk of hazardous materials and wastes exposure to workers constructing the project. The ISA would be prepared to be consistent with the Caltrans SER and the latest federal and state regulations for hazardous material, hazardous waste, and contamination. The ISA would evaluate impacts from hazardous materials and wastes (should they be present), as well as recommend AMMs and BMPs to address these sources of contamination.

*Noise:* A Noise Study Report (NSR) would be prepared, consistent with the Caltrans SER and the latest Caltrans Annotated Noise Study Report outline format, to determine if noise impacts would occur with the Build Alternatives. As the project would improve transit, bicycle and pedestrian facilities, permanent noise increases are unlikely to occur.

*Biological Resources:* Under Build Alternative 1, a Natural Environmental Study (NES) would be prepared to determine if there are specific sensitive species in the project area. An NES with minimal impact (NES-MI) is anticipated. A NES would be required to comply with the United States Fish and Wildlife Service (USFWS) requirements to satisfy NEPA. The NES would evaluate impacts to biological resources and habitats (should they be present), as well as recommend AMMs and BMPs to assess these sensitive resources.

Under Build Alternative 2, a Biological Opinion would be required due to the anticipated impacts of the roundabout on the Los Trancos Creek. The Biological Opinion would include Section 7 consultation with the National Marine Fish Services as well as additional species level surveys to determine the presence or absence of special status species. It is also expected that under Build Alternative 2, the project would be required to prepare fish passage surveys and fish passage models to ensure that the proposed changes would not result in conditions that would limit or restrict fish passage.

A tree survey would also be required in order to obtain a tree removal permit if any trees that qualify as protected under the County of San Mateo's Significant or Heritage Tree Ordinance would be removed as a result of the project.

## **7. Level of Effort: Risks and Assumptions**

Risk management is the systematic process of identifying and planning for issues that, were they to occur, could affect project objectives such as the project timeline and/or budget. Initial phases of project development include developing and regularly reviewing a risk management matrix prepared for a project. This PEAR is designed to provide an evaluation of the level of technical study and environmental documentation that would be required for the project.

The discussion of PEAR technical summaries below is based on desktop surveys of the environmental study area, existing public data, and technical reports prepared for other projects in the region. The summaries evaluate the potential environmental risks associated with the Build Alternatives. Based on the information, the process of attaining full environmental approval would take approximately 12 months to complete, depending on the Build Alternative carried forward.

**Attachment B** of this PEAR provides a sample schedule of the environmental review process for the project.

The following assumptions were made when evaluating the project:

- The community would be generally supportive of the need for the project.
- Hazardous materials could be encountered in the soils along the Alpine Road corridor.
- Undocumented Native American and cultural resources could potentially be encountered during construction.
- Undocumented paleontological resources could be potentially encountered during construction
- Section 4(f) resources may be present in the vicinity of the environmental study area. There may be cultural resources in the environmental study area subject to Section 4(f) evaluation. However, it is anticipated that the Build Alternatives would not result in a Section 4(f) use.

## **8. PEAR Technical Summaries**

### **8.1 Land Use**

The Build Alternatives would require preparation of a CIA memorandum to document the project's consistency with local and regional planning documents, and to document temporary or permanent land acquisitions associated with the project.

According to San Mateo County's zoning map, the project alignment is surrounded by 'Mixed, Institutional/Open Study/ Future Study' land use designations between La Cuesta Drive and Piers Lane. The zoning designation for this area is Zone R-E

(Residential Estates District) which allows for single-family dwellings, public parks/playgrounds, farming/gardening, and home occupations. The project alignment south of the I-280 is surrounded by 'Medium Low Density Residential' land use designations and are zoned as Zone R-1 (One Family Residential District) which allows for single-family dwellings.

Areas to the west of the alignment are designated for 'Neighborhood Commercial' land uses to the south of La Cuesta Drive, and include zoning designations of Zone P (Parking District), Zone O (Office District) and Zone C-1 (Neighborhood Business District) which allows for parking, office development, and low-density business developments. North of Piers Lane, the alignment is surrounded by 'Mixed, Institutional/Open Study/ Future Study' land use designations (Zone R-E) to the west, and 'Medium Low Density Residential' land use (Zone R-1) to the east.<sup>2</sup>

In addition, the alignment is adjacent to the Residential Low-Density zone (within the city boundary of Menlo Park) to the north and to the Residential Estate (R-E) Districts within the town boundary of Portola Valley to the south.<sup>3,4</sup> The alignment is also adjacent to land designated for Special Conservation within the boundary of Stanford University in Santa Clara County to the east.<sup>5</sup>

Section 4(f) of the Department of Transportation Act of 1966 (Section 4(f)) is a policy that requires an analysis of the potential effects of the project on parks, recreational facilities, wildlife and waterfowl refuges, and cultural resources within approximately 0.5 mile of the project alignment. The CIA would include a discussion of Resources Evaluated to the Requirements of Section 4(f). It is anticipated that a no-use determination would be made for both Build Alternatives (this includes properties for which it may be determined that Section 4(f) does not apply and properties for which Section 4(f) does apply but there is no use).

The two Build Alternatives would be consistent with state, regional, and local plans and would not result in residential displacement. ROW acquisition is anticipated but would not result in displacement.

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<sup>2</sup> County of San Mateo. 2024. Planning and Building Map Viewer. Available at: [https://gis.smcgov.org/Html5Viewer/Index.html?configBase=https://gis.smcgov.org/Geocortex/Essentials/REST/sites/PubPlanViewer\\_14/viewers/HTML52110/virtualdirectory/Resources/Config/Default](https://gis.smcgov.org/Html5Viewer/Index.html?configBase=https://gis.smcgov.org/Geocortex/Essentials/REST/sites/PubPlanViewer_14/viewers/HTML52110/virtualdirectory/Resources/Config/Default). Accessed August 8, 2024.

<sup>3</sup> City of Menlo Park. 2024. GIS Viewer. Available at: <https://gisweb.menlopark.gov/vertigisstudio/web/?app=1cc5159fd9cb44b2b1f6daa39814419f>. Accessed August 8, 2024.

<sup>4</sup> Town of Portola Valley. 2007. Zoning Map. Available at: <https://www.portolavalley.net/home/showpublisheddocument/6770/635634073606070000>. Accessed August 8, 2024.

<sup>5</sup> Stanford University. 2015. 2000 Stanford University Community Plan. Available at: <https://plandev.sccgov.org/policies-plans-and-documents>. Accessed August 9, 2024.

## 8.2 Growth

Both Build Alternatives would improve connectivity and safety for pedestrians and bicyclists using Alpine Road. Neither Build Alternative would increase local roadway capacity. As such, a growth analysis would not be required for the project. This will be documented in the CIA memorandum, and no further analysis would be required. There is no difference in the technical reporting requirements between the two Build Alternatives.

## 8.3 Farmlands/Timberlands

According to the California Important Farmland Finder, there are 97.09 acres of unique farmland and 21.97 acres of farmland of local importance within the 0.5-mile-radius of the Alpine Road corridor. There are no prime farmlands, farmland of statewide importance, or timberlands within the corridor.<sup>6</sup>

The project would not result in the conversion of any farmlands. The project would be limited to the existing ROW and would not alter or impact adjacent farmlands. No farmland conversion or acquisition of farmland under the Williamson Act is anticipated. Therefore, no further analysis is required.

## 8.4 Community Impacts

The project alignment is located in Census tract 6130 and 6132, in block groups 6130.2, 6132.1, 6132.2, 6132.3. ROW acquisition is anticipated but would not result in residential or commercial displacement as the scale of work is limited. Impacts to community cohesion are anticipated to be beneficial, since the surrounding area and properties would retain their land use form and functionality, but with improvements to multimodal accessibility and pedestrian/cyclist safety. The Build Alternatives appear to have beneficial impacts to local communities and community facilities, and temporary impacts to residences and businesses during construction are expected to be minimal as access would be maintained throughout construction. Furthermore, a Traffic Management Plan (TMP) would be created to minimize temporary impacts to traffic flow and circulation during construction.

As noted in **Section 6** above, a CIA memorandum would be prepared to evaluate construction-period effects, and would document public engagement efforts for the project. There is no difference in the technical reporting requirements between the Build Alternatives.

## 8.5 Visual/Aesthetics

However, the Town of Portola Valley has designated the road as a scenic corridor in its Alpine Scenic Corridor Plan. The project would not alter the natural and rural

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<sup>6</sup> California Department of Conservation. 2024. California Important Farmland Finder. <https://maps.conservation.ca.gov/DLRP/CIFF/>. Accessed August 9, 2024.

appearance of the area as the project would improve multimodal access and safety. Therefore, the project would be consistent with regulations outlined in the Plan.<sup>7</sup>

While I-280 in San Mateo County is an officially designated scenic highway between Post Miles (PM) R0.0 and R21.8, the corridor improvements would be limited to the on/off ramps of the I-280 and Alpine Road intersection. The bicycle and pedestrian improvements along Alpine Road would not interfere with existing views along I-280. Therefore, the improvements along the corridor would not affect this designation.

The project would introduce new visual elements to the area including the potential removal of one small tree under Build Alternative 1. Build Alternative 1 would also introduce new traffic signals, which would not substantially change the existing character of the area, which is dominated by the roadway. Build Alternative 2 would require additional tree removal including potential removal of riparian trees adjacent to Los Trancos Creek. Build Alternative 2 would also introduce roundabouts which could potentially result in more notable visual changes compared to existing conditions. Additionally, both Build Alternatives would introduce enhanced bus stops, curbs, intersections and pedestrian/cyclist protection along the roadway.

To reduce the visual impacts of these project features, aesthetic treatments consisting of color, texture, and/or pattern would be applied to the design of the project, regardless of the Build Alternative selected. The aesthetic treatment would be context sensitive to the location and would be compatible with existing roadway features in the project Area. Additionally, tree removal would comply with applicable San Mateo County Heritage tree removal permit guidelines which would include replacement plantings at a minimum of a 1:1 replacement ratio or greater depending on the size of the tree removed. The latest Caltrans VIA Questionnaire tool would be prepared to determine the appropriate type of VIA required, consistent with the Caltrans SER. It is anticipated that a VIA Memorandum would be prepared that would describe project features, impacts, and any AMMs that may be necessary.

## **8.6 Cultural Resources**

The project alignment is located in the County of San Mateo. Search requests for California Historical Resources Inventory System (CHRIS) and Sacred Lands File (SLF) were submitted to the Northwest Information Center and the Native American Heritage Commission on August 16, 2024. The results of the CHRIS and SLF searches determined that there is a high potential to encounter unrecorded Native American resources within the project corridor.

Both Build Alternatives are primarily within existing ROW, which is generally disturbed as a result of past excavation and grading for highway and local roadway construction. However, the project will require excavation work at depths of up to 12 feet for traffic signal foundations resulting in the possibility for buried archaeological deposits to be encountered during project construction. In addition, the project anticipates excavation

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<sup>7</sup> Town of Portola Valley. 2023. Alpine Scenic Corridor Plan. Available at: <https://www.portolavalley.net/home/showdocument?id=5974>. Accessed August 19, 2024.

work at depths up to 4 feet during the construction of the pavement structural section near the on- and off ramp intersections. This would be further explored during the PA&ED phase. Because NEPA applies, compliance with Section 106 of the NHPA is required. In addition, it is expected that the project may require the preparation of an extended Phase I (XPI) report as a part of compliance with Section 106 of the NHPA. This will be determined during the PA/ED phase.

In fulfillment of NHPA requirements under Section 106, an APE will be developed for the project encompassing both the temporary and permanent project footprint. A HPSR would be prepared as the summary document for cultural resources studies that would minimally include an ASR. Based on the type of project improvements and location, we do not anticipate built historic resources would be present and/or require detailed evaluation. A Historic Property Survey Report (HPSR) would be prepared to summarize the identification efforts conducted to address the requirements of the Caltrans Programmatic Agreement (PA). Pertinent technical studies (e.g., the ASR) would be appended to the HPSR. If no cultural resources are determined eligible under the NRHP, the Section 106 responsibilities would be fulfilled. There would be no difference in the level of initial cultural resources documentation required between the Build Alternatives.

As pertaining to tribal resources, tribal consultation with Native Americans is required to determine if the project would affect historic properties of religious or cultural significance, as a part of compliance with Section 106 of the National Historic Preservation Act (NHPA) and the Caltrans PA.

If NRHP-eligible built resources or archaeological resources are impacted by the Build Alternatives, a Section 4(f) evaluation would be required, as well as a Finding of Effect analysis. If adverse effects would occur, a Memorandum of Agreement and Historic Property Treatment Plan would be prepared to document mitigation measures agreed upon by the County, Caltrans, and the State Historic Preservation Officer.

## **8.7 Hydrology and Floodplain**

According to the FEMA Flood Insurance Rate Maps (FIRM), the entirety of the project alignment would be located in areas designated as Zone X, which represent areas of minimal flood hazard.<sup>8</sup> Zone X is defined as areas determined to be outside of the 500-year floodplain.<sup>9</sup> East to the project's alignment is a Zone D area, which indicates possible but undetermined flood hazards.<sup>10</sup> Adjacent to the project alignment's southern end exists a Zone A area along Los Trancos Creek, which indicates areas with a one percent annual chance of flooding with no depths or base flood elevation data

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<sup>8</sup> Federal Emergency Management Agency. 2012. National Flood Hazard Layer Viewer. Available at <https://www.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd>. Accessed August 9, 2024.

<sup>9</sup> Federal Emergency Management Agency. 2023. Zone X. Available at: <https://www.fema.gov/glossary/zone-c-or-x-unshaded>. Accessed August 9, 2024.

<sup>10</sup> Federal Emergency Management Agency. 2023. Zone D. Available at: <https://www.fema.gov/glossary/zone-d>. Accessed August 9, 2024.

available.<sup>11</sup> Construction of the roundabouts proposed under Build Alternative 2 may require the realignment of Los Trancos Creek. If the project requires the realignment of the Los Trancos Creek, the project may also impact the existing floodplain surrounding the creek.

Due to the fact that portions of the two Build Alternatives are within 0.5-miles of areas designated by FEMA as Zones A, a LHS would be required. A LHS is a preliminary study of base floodplain encroachments by the project performed by a registered engineer with hydraulic expertise. If, based on the results of the LHS, either: 1) a significant encroachment on a floodplain, 2) an inconsistency with existing watershed and floodplain management programs, or 3) uncertainty as to what impacts would occur exists, then a Floodplain Evaluation Report would be prepared. If no encroachment or impacts to the floodplain would occur, then a Summary Floodplain Encroachment Report would be prepared. If these efforts identify impacts to the floodplain, then the project would incorporate the appropriate AMMs related to construction in and near floodplains.

## **8.8 Water Quality and Storm Water Runoff**

It is anticipated that construction activities associated with the project would disturb more than one acre of soil, therefore, the project must comply with the Statewide NPDES Construction General Permit. The project would also be required to comply with applicable requirements of the Statewide Caltrans NPDES Permit. The Caltrans NPDES Permit references the Construction General Permit for regulation of stormwater discharges from all Caltrans construction projects. Temporary and permanent (post-construction) BMPs that are required to comply with the permit, such as the reduction or avoidance of runoff and the preparation of a SWPPP would be presented in the project Water Quality Assessment Report during the PA&ED phase. The project would not require construction activities such as dewatering or alterations to existing water resources. Additionally, the project would be required to file a Notice of Intent (NOI) to be covered under the State NPDES General Construction Permit for discharges of storm water associated with construction activity.

The project is not anticipated to add more than 10,000 square feet of impervious surface area to the project site compared to existing conditions. The project currently estimates the New Non-Impervious Surface (NNI) to be approximately 0.15 acres and the Remaining Impervious Surface (RIS) to be zero acres. Therefore, the project would not be required to incorporate additional stormwater treatment measures to offset the amount of impervious surface added by the project.

However, in order to comply with the Clean Water Act and the Statewide NPDES Construction General Permit, both Build Alternatives would be required to incorporate the use of temporary BMPs, as well as permanent BMPs to prevent effects to water quality during construction (such as excessive erosion or sedimentation) and operation.

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<sup>11</sup> Federal Emergency Management Agency. 2023. Zone A. Available at: <https://www.fema.gov/glossary/zona>. Accessed: August 2024.

These BMPs are outlined in Caltrans' Storm Water Management and would be incorporated into the project's SWPPP. Adherence with Caltrans BMPs would ensure that construction and operation of the Build Alternatives would not adversely affect water quality in local waterways or groundwater quality.

Additionally, under Build Alternative 2, the project may require the realignment of the existing Los Trancos Creek, resulting in temporary and localized dewatering. As such, Section 401 and Section 404 permits, issued by the San Francisco Bay Regional Water Quality Board and the United States Army Corp of Engineers, respectively, would be required prior to construction.

Refer to **Section 8.15, Biological Environment**, for a discussion of potential effects to local waterways. There would be no difference in reporting requirements between the Build Alternatives.

## **8.9 Geology, Soils, Seismic and Topography**

The project is located approximately 0.25 miles north of the Hermit Fault Zone and approximately one mile northwest of the Monte Vista-Shannon fault zone.<sup>12</sup> The project is not within a landslide zone but is located within a liquefaction zone on relatively flat land.<sup>13</sup> Soils underlying the project corridor consist of Flaskan sandy clay loam soils, Botella soils and Urban land soils which are described as having deep soil horizons, and typically having moderate permeability. Flaskan sandy clay loam and Botella soils are described as being well drained and having a medium potential for run-off. Urban land soils typically have a very high potential for run-off. Flaskan sandy clay loam soils, Botella and Urban land soils are all rated as "somewhat limited" for urban and recreational uses. Additionally, the project corridor contains Orthents soils, which describe a type of shallow soil that lacks horizon development and are often referred to as skeletal soils.<sup>14</sup> Urban and Orthent soil types are not rated for urban or recreational uses.

A preliminary geotechnical report would be prepared to evaluate existing soil and/or seismic conditions according to Caltrans Geotechnical Manual. Furthermore, Caltrans Seismic Design Criteria Version 2.0 and probabilistic design spectra would be used. Prior to final design, field explorations would be required to fully document and evaluate subsoil conditions, groundwater conditions, and corrosion potential. Slope stability that would be potentially affected by the project would be analyzed so slope maintenance and protections are considered.

The project would be designed in accordance with the Caltrans' 2017 Deterministic Peak Ground Acceleration (PGA) map and Acceleration Response Spectrum (ARS)

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<sup>12</sup> California Department of Conservation. 2024. Fault Activity Map of California. Available at: <https://maps.conservation.ca.gov/cgs/fam/>. Accessed August 9, 2024

<sup>13</sup> California Geological Survey. 2024. Earthquake Zones of Required Investigation. Available at: <https://maps.conservation.ca.gov/cgs/EQZApp/app/>. Accessed August 9, 2024

<sup>14</sup> California Soil Resource Lab. SoilWeb. 2024. Available at: <https://casoilresource.lawr.ucdavis.edu/gmap/>. Accessed August 9, 2024.

Online. During the Plan, Specification, and Estimate (PS&E) phase of the project, additional data will be collected to confirm site conditions and as the basis for appropriate mitigation measures.

### **8.10 Paleontology**

Paleontological resources in prehistoric fossils have been discovered in San Mateo County.<sup>15</sup> Unrecorded paleontological resources have the potential to occur at the project site. A Paleontological Evaluation Report (PER) will be prepared to: (1) identify any known paleontological resources that exist in the project site; (2) determine Caltrans' legal responsibilities; (3) decide the necessity for involving other agencies and/or stakeholders; (4) determine whether the resource can be avoided; and (5) determine the significance of the resource. If unrecorded paleontological resources are discovered within the project site, construction monitoring by a qualified paleontologist may be required, and a curation program prepared for the project to create protocols for how to protect any resources discovered during construction, thus delaying project schedule and adding monitoring costs.

### **8.11 Hazardous Waste/Materials**

Disturbance of contaminated materials during construction could adversely affect human health and the environment. An ISA would be prepared for the Build Alternatives to better identify the areas with the highest risks for soil and groundwater contamination, and whether those areas are located in close proximity to where construction activities would occur. Additionally, standard specifications and avoidance measures would be identified in the ISA to document proper equipment siting and management protocols that prevent the inadvertent release/spill of hazardous materials during project construction. There would be no difference in the level of initial hazardous risk evaluations required for the Build Alternatives.

There are three LUST Cleanup Sites within the project alignment, all of which have been completed with cases closed. One cleanup program site is located approximately 0.2 miles to the south of the project alignment, which has been completed with the case closed. There are no unremediated contamination sites located within or adjacent to the project alignment.<sup>16</sup> Shallow soils within 30 feet of the edge of the pavement in highway corridors built before the 1980s have the potential to be contaminated with aerially deposited lead from historical car emissions. Since the proposed Build Alternatives would be constructed within the Alpine Road corridor, which was built before 1980 (in

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<sup>15</sup> County of San Mateo. 1986. General Plan. Available at: <https://www.smcgov.org/planning/general-plan>. Accessed August 9, 2024.

<sup>16</sup> California State Water Resources Control Board. 2024. Geotracker. Available at: <https://geotracker.waterboards.ca.gov/map/>. Accessed August 9, 2024.

1894), an investigation for heavy metals/aerially deposited lead would be required but may be deferred until the final design phase of the project.<sup>17</sup>

## 8.12 Air Quality

The Build Alternatives are located within San Mateo County, a subregion of the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD).

According to the National Air Quality Standards (NAAQS), San Mateo County is currently classified as a nonattainment area for three NAAQS pollutants including Ozone (O<sub>3</sub>), PM<sub>2.5</sub>, and an attainment area for Carbon Monoxide (CO), Nitrogen Dioxide (NO<sub>2</sub>), Sulfur Dioxide (SO<sub>2</sub>), and Lead.<sup>18</sup> San Mateo County's area designation for PM<sub>10</sub> is currently unclassified.<sup>19</sup>

The project must conform to the BAAQMD's 2017 Clean Air Plan (CAP). The CAP is based on regional population, housing, and employment projections compiled by the Association of Bay Area Governments (ABAG). These projections include the years 2017 through 2050. A project is considered to conflict with or obstruct the implementation of a regional air quality plan if it would be inconsistent with the CAP's regional growth assumptions in terms of population, employment, or regional growth in VMT. Given the project would improve bicycle pedestrian infrastructure and is expected to reduce VMT, the project is anticipated to conform with the 2017 CAP.

U.S. Environmental Protection Agency (EPA) Conformity Rule 40 CFR 93.105 requires regional interagency consultation to discuss and gain consensus on conformity issues. Implementation of the Build Alternatives would improve the safety of cyclists, motorists and pedestrians who travel on Alpine Road. Therefore, the project is anticipated to be exempt from a regional level conformity analysis per 40 CFR 93.127. The project would be required to prepare an AQR and consult with the Metropolitan Transportation Commission Air Quality Task force to determine if the project is a Project of Air Quality Concern.

Construction of each of the Build Alternatives would require earth movement, grading, and other associated activities. Avoidance measures, including but not limited to standard construction BMPs established by BAAQMD, would be incorporated into the recommendations of the report in order to reduce construction emissions. There would be no difference in the technical reporting requirements between Build Alternatives.

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<sup>17</sup> Town of Portola Valley. 2022. "Alpine Rd History". Available at: <https://www.portolavalley.net/about/history-of-portola-valley/alpine-road-history#:~:text=Alpine%20Road%20was%20built%20in,a%20road%20to%20the%20coast>. Accessed Aug.9, 2024

<sup>18</sup> California Air Resources Board. 2023. Map of State and Federal Designations. Available at: <https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations> Accessed August 2024

<sup>19</sup> California Air Resources Board. 2022. Map of State and Federal Designations. Available at: [https://ww2.arb.ca.gov/sites/default/files/2023-02/fed\\_pm10.pdf](https://ww2.arb.ca.gov/sites/default/files/2023-02/fed_pm10.pdf). Accessed August 2024

### 8.13 Noise and Vibration

The closest sensitive receptors that could be potentially impacted by the project would include residential communities located adjacent to the project corridor to the east and west of the Alpine Road. Residential communities predominately occur on the east side of Alpine Road between Stowe and Piers Lane north of I-280, and on the westside of Alpine Road between La Cuesta Drive and Golf Lane to the south of I-280.

Once operational, vehicle trips along the project alignment are expected to decrease due to the increase in use of multi-modal alternatives such as transit, cycling, or walking. Accordingly, the project is expected to reduce traffic noise along the project alignment. During construction, noise levels at and adjacent to construction areas would temporarily increase. However, since the project is not classified as a Type I project according to 23 CFR 772, a Noise Study Report (NSR) would not be required. Instead, a noise technical memorandum would be prepared to evaluate potential noise and vibration effects during construction and, if warranted, propose appropriate measures to minimize temporary noise impacts.

### 8.14 Energy and Climate Change

The project is designed to improve mobility along the Alpine Road corridor and is anticipated to provide the incidental benefit of reducing resulting congestion and/or vehicle time delays. Both Build Alternatives would improve multimodal transportation, thereby decreasing operational AQ/GHG emissions (particularly Build Alternative 2 that would include roundabouts). A qualitative Operational GHG and quantitative Construction GHG analysis would be prepared as part of the AQR and will be required for the project. However, according to Caltrans Guidelines, the project would also be required to prepare a qualitative Energy Analysis Report outlining the potential energy impacts of the project and to summarize the findings of this report within the IS/EA.<sup>20</sup>

Caltrans developed the Guidance on Incorporating Sea Level Rise (SLR) to address sea level rise impacts on existing infrastructure and future projects. The guidance provides screening criteria for construction projects within vulnerable areas to determine whether a range of sea level rise scenarios need to be considered. SLR is an integral part of climate change discussions, the effects of which would have impacts on all modes of transportation located near the coast. Screening criteria are used to assess whether an individual project would potentially be impacted by SLR. The project is not located near the coast, being approximately 5.2 miles away from the San Francisco Bay to the north and approximately 12 miles from the Pacific Ocean to the south. The project is also not located in an area vulnerable to SLR according to available mapping. Therefore, the project would not be impacted by SLR. Thus, the project would be unlikely to experience SLR throughout the foreseeable future.<sup>21</sup> One of the

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<sup>20</sup> California Department of Transportation (Caltrans). 2023. Energy Analysis Report Decision Tree. Available at: <https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/ser/nepa-cega-energy-a11y.pdf>. Accessed January 23, 2025.

<sup>21</sup> National Oceanic and Atmospheric Administration. 2023. Sea Level Rise Viewer. Available at: <https://coast.noaa.gov/slr/#>. Accessed August 9, 2024

responsibilities of transportation development located near the coast is to ensure that reliable transportation routes are available. In consideration of these factors, the project does not warrant further consideration of SLR. No further analysis relative to sea level rise is needed for the project.

According to Cal Fire’s recently updated Fire Hazard Severity Map, the project is located in a Local Responsibility Area with Moderate fire hazard risk.<sup>22</sup> The nearest area designated for Very High fire hazard risk is the Palo Alto Foothills Preserve, located approximately 3.0 miles south of the project site.

### 8.15 Biological Environment

The project corridor is generally characterized primarily with developed open space and low intensity residential and commercial development patterns and also includes evergreen forest, woody wetland, and deciduous forest land cover types according to the 2021 National Land Cover Database.<sup>23</sup> The California Natural Diversity Database (CNDDDB) was utilized to determine what special status species have the potential to occur in the project Corridor. This database search found that the project corridor has the potential to contain 4 special status plant species and 20 special status animal species. The special status plant and animal species that have the potential to occur within the project corridor can be found in **Table 1** below.

**Table 1 Federal and State Special Status Species**

Species	Federal Status	State Status
<b>Plant Species</b>		
Fountain Thistle ( <i>Cirsium fontinale</i> var. <i>fontinales</i> )	Endangered	Endangered
Two-fork Clover ( <i>Trifolium amoenum</i> )	Endangered	N/A
San Mateo thorn-mint ( <i>Acanthomintha duttonii</i> )	Endangered	Endangered
Marin Western Flax ( <i>Hesperolinon congestum</i> )	Threatened	Threatened
<b>Animal Species- Amphibians</b>		
California tiger salamander - central California ( <i>Ambystoma californiense</i> )	Threatened	Threatened
Foothill yellow-legged frog - central coast ( <i>Rana boylei</i> )	Threatened	Endangered
California red-legged frog ( <i>Rana draytonii</i> )	Threatened	None
<b>Animal Species- Birds</b>		
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	Delisted	Endangered

<sup>22</sup> California Department of Forestry and Fire Protection (Cal Fire). 2025. Fire Hazard Severity Zones. Available at: <https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones>. Accessed April 11, 2025.

<sup>23</sup> California Department of Fish and Wildlife. 2024. CNDDDB QuickView Tool. Available: <https://apps.wildlife.ca.gov/bios6/?tool=cnddbqv>. Accessed: August 2024.

Species	Federal Status	State Status
Western snowy plover ( <i>Charadrius nivosus nivosus</i> )	Threatened	None
California least tern ( <i>Sternula antillarum browni</i> )	Endangered	Endangered
California black rail ( <i>Laterallus jamaicensis coturniculus</i> )	None	Threatened
California Ridgways rail ( <i>Rallus obsoletus obsoletus</i> )	Endangered	Endangered
<b>Animal Species- Fish</b>		
green sturgeon - southern ( <i>Acipenser medirostris</i> )	Threatened	None
longfin smelt ( <i>Spirinchus thaleichthys</i> )	Proposed Endangered	Threatened
steelhead - central California coast ( <i>Oncorhynchus mykiss irideus</i> )	Threatened	None
<b>Animal Species- Insects</b>		
Crotchs bumble bee ( <i>Bombus crotchii</i> )	None	Candidate Endangered
western bumble bee ( <i>Bombus occidentalis</i> )	None	Candidate Endangered
Bay checkerspot butterfly ( <i>Euphydryas editha bayensis</i> )	Threatened	None
<b>Animal Species- Mammals</b>		
salt-marsh harvest mouse ( <i>Reithrodontomys raviventris</i> )	Endangered	Endangered
southern sea otter ( <i>Enhydra lutris nereis</i> )	Threatened	None
<b>Animal Species- Reptiles</b>		
Alameda whipsnake ( <i>Masticophis lateralis euryxanthus</i> )	Threatened	Threatened
northwestern pond turtle ( <i>Actinemys marmorata</i> )	Proposed Threatened	None
San Francisco gartersnake ( <i>Thamnophis sirtalis tetrataenia</i> )	Endangered	Endangered

Source: CNDDDB, 2024

The project would be located adjacent to Los Trancos Creek. If Los Trancos Creek or the surrounding riparian habitat is determined to be a suitable habitat for special-status species, specific AMMs and BMPs would be required to assess the potential for these species and to reduce potential impacts.

Under Build Alternative 1, no work or construction activities would be conducted in Los Trancos Creek. A Natural Environment Study (NES) will be prepared to confirm the potential for presence of protected species or their habitat in the project corridor. A NES would be required to comply with FWHA's requirements to satisfy NEPA. The NES would detail all construction-related impacts to the biological resources that may be associated with the project. The NES would evaluate impacts to biological resources habitats and recommend AMMs and BMPs to assess these sensitive resources to reduce potential impacts.

Under Build Alternative 2, the project may require the realignment of Los Trancos Creek and would therefore require the preparation of a Biological Opinion including consultation with the National Marine Fishery Service (NMFS) as well as a Lake and Streambed Alteration Agreement (LSAA) pursuant to Section 1602 of the California Fish and Game Code. In addition to the Biological Opinion and LSAA, the project would also be required to prepare a fish passage analysis to ensure that the modifications do not impede the ability of local fish species to navigate the creek. Any construction work in Los Trancos Creek would require specialized biologists to be present to monitor conditions for fish and other wildlife.

In addition to the special status species listed in **Table 1** above, other protected and non-protected species may be located within the project site. This could include migratory bird species protected under the Migratory Bird Treaty Act, roosting bat species, dusky footed woodrat, and other species not included in **Table 1** above. Discussion of the potential impacts to all of these species and applicable AMMs and Mitigation Measures to reduce, minimize and mitigate those potential impacts would be included in the NES or the Biological Opinion.

A tree survey will also be required if any trees that qualify for protection under the County of San Mateo's Significant or Heritage Tree Ordinance need to be removed as a result of the project. Currently, it is anticipated that only one tree would be removed outside of the Caltrans ROW under Build Alternative 1. Under Build Alternative 2, it is anticipated that more trees would require removal, due to the potential realignment of the creek. Tree removal would require compliance with the County of San Mateo Significant and or Heritage Tree Removal permit. Under Build Alternative 2, the applicant would be required to notify and coordinate the removal of any riparian trees along Los Trancos Creek with CDFW pursuant to Section 1602 of the California Fish and Game Code including applicable approvals and permits.

### **8.16 Cumulative Impacts**

Cumulative impacts occur as a result of the combined actions of multiple projects. Even when an individual project would not result in significant impacts, the project in combination with other related projects may result in a cumulative impact. If so, it must be determined whether the project's contribution to the cumulative impact would be cumulatively considerable. There would be no difference in the technical reporting requirements between the Build Alternatives.

### **8.17 Context Sensitive Solutions**

Caltrans uses Context Sensitive Solutions (CSS) to integrate and balance community, aesthetic, historic, and environmental values with transportation safety, maintenance, and performance goals. CSS are reached through a collaborative, interdisciplinary approach involving all stakeholders, engaged through early coordination with agencies as well as early outreach to the community. There would be no difference in the technical reporting requirements between Build Alternatives.

**9. Summary Statement for PID**

The County would serve as the CEQA lead agency and Caltrans would serve as the NEPA lead agency under its assumption of responsibility pursuant to 23 U.S. Code 327. It is expected that the environmental technical reports and the PA&ED would take approximately 24 months to prepare and process for final adoption/approval of the PA&ED if an IS/EA document is prepared. This would include time for coordination with the environmental division staff within Caltrans; but does not include time for obtaining permits from federal or state resource agencies. It is anticipated that multiple environmental studies and reports will be required for this project. For both Build Alternatives, the key environmental issues appear to be potential impacts to cultural resources during construction and hydrologic impacts associated with changes in impervious surfaces and corridor design.

**10. Disclaimer**

This Preliminary Environmental Analysis Report (PEAR) provides information to support the programming of the proposed project. It is not an environmental determination or document. Preliminary analysis, determinations, and estimates of mitigation costs are based on the project description provided in the PID. The estimates and conclusions in the PEAR are approximate and are based on cursory analyses of probable effects. A reevaluation of the PEAR will be needed for changes in project scope or alternatives, or in environmental laws, regulations, or guidelines.

**11. List of Preparers**

Cultural Resources specialist: Derek Hicks	Date: 8/26/2024
Biologist: Derek Hicks	Date: 8/26/2024
Community Impacts specialist: Eric Xia	Date: 8/23/2024
Noise and Vibration specialist: Derek Hicks	Date: 8/26/2024
Air Quality specialist: Derek Hicks	Date: 8/26/2024
Paleontology specialist/liaison: Eric Xia	Date: 8/23/2024
Water Quality specialist: Derek Hicks	Date: 8/26/2024
Hydrology and Floodplain specialist: Eric Xia	Date: 8/23/2024
Hazardous Waste/Materials specialist: Eric Xia	Date: 8/23/2024
Visual/Aesthetics specialist: Eric Xia	Date: 8/23/2024
Energy and Climate Change specialist: Eric Xia	Date: 8/26/2024
Other: Krysten McCue, Deputy Project Manager	Date: 8/26/2024
PEAR Preparer: Audrey Zagazeta, Project Manager	Date: 8/26/2024

**12. Review and Approval**

I confirm that environmental cost, scope, and schedule have been satisfactorily completed and that the PEAR meets all Caltrans requirements. Also, if the project is scoped as a routine EA, complex EA, or EIS, I verify that the HQ DEA Coordinator has concurred in the Class of Action.

  
\_\_\_\_\_  
John Gretsch-Seal, Environmental Specialist

6/23/25  
Date

  
\_\_\_\_\_  
Fitsum Worrede, Project Manager

6/23/25  
Date

**ATTACHMENTS:**

**Attachment A:** PEAR Environmental Studies Checklist

**Attachment B:** Schedule (Gantt Chart)

**Attachment C:** Project Layout within Caltrans ROW

## **Attachment R**

# **PIR Climate Change Risk and Adaptation Report**

# Climate Change Risk and Adaptation Report Cover Page

## Preliminary Climate Change Screening:

Please note that the PIR Guidance and [attached Appendix](#) provide detailed directions for completing this screening, including the location of data; it is recommended to consult the Appendix to complete.

### 1. Coastal Jurisdiction Boundary Determination

Is any portion of the proposed Project limits within the Coastal Zone (external coast or San Francisco Bay) or Legal Delta?

Yes- The project location is within the \_\_\_\_\_ jurisdiction.

(if yes, Section 1, 2, and 3 in Report must be completed)

No

### 2. Was the project location or asset(s) within the project scope identified to be at preliminary risk to any climate stressors over the anticipated design life of the project in the following assessments?

[Caltrans Climate Change Vulnerability Assessments](#)

Yes                       No                      If yes, identify climate stressor(s): Wildfire Risk Present

[Caltrans Adaptation Priority Reports](#)

Yes                       No                      If yes, list number of asset(s) identified:

### 3. Have the following documents/plans been scoped for climate change considerations? Check all that apply.

Transportation Planning Scoping Information Sheet (TPSIS) – attach TPSIS to Climate Change Report

Corridor Plan(s) – include if applicable

If the documents above **have** addressed climate change considerations, but further climate change analysis is needed (based off screening criteria), please leverage that information in completing sections 1, 2, and 3 of the Report and ensure that information is updated, accurate, and complete to account for all climate risks and adaptation considerations. If the documents **have not** addressed climate considerations but the SHS and/or assets are shown to be at risk in the Vulnerability Assessments and/or Adaptation Priority Reports, please complete sections 1, 2, and 3 in full to adequately scope for climate change considerations.

# Climate Change Risk and Adaptation Report (Report)

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## Introduction

The PIR template requires a screening be performed to assess climate risk for all project areas. **If the data and scoping documents demonstrate there are climate risks, then the Climate Change Risk and Adaptation Report is required to be completed by climate change subject matter expert(s) (SME) in the district.** The Report consists of three sections focusing on identification of climate risk, coastal considerations, and adaptation alternatives. The PID writer then will summarize findings from the Report in the PIR.

The following guidance provides an overview of consideration of climate change risk, adaptation, and resilience to complete the climate change section of the PIR. This section should identify potential issues that will affect the cost, schedule and scope of the project. Sections 1, 2, and 3 can be considered a template, followed by the Appendix which contains step-by-step guidance to complete these sections.

Climate Adaptation is defined<sup>1</sup> as “responding to the impacts of climate change, both proactively and reactively. Adaptation planning can include preventative measures to slow the progression of climate change and mitigation measures to reduce the effects”. Resilience is defined<sup>2</sup> as “the ability to prepare and plan for, absorb, recover from, or more successfully adapt to adverse events.”

Adaptation measures must be implemented according to the proposed project's scope of work, asset design life, and other relevant considerations.

## Section 1: Climate Exposure

### Section 1.1 – Evaluate Baseline Climate Risks

Please note that the [attached Appendix](#) provide detailed directions for completing this section; it is recommended to consult the Appendix to complete.

Building on the screening results, identify projected climate change risks to all asset(s) within the proposed project location over the anticipated design life of the project. If this information has been previously identified per the screening above (via District Vulnerability Assessment, District Adaptation Priority Report, relevant Corridor Plan, and/or the Transportation Scoping and Information Sheet (TPSIS)) summarize the information below and cite the sources. **Augment or re-**

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<sup>1</sup> USDOT definition of Climate Adaptation

<sup>2</sup> American Association of State Highway and Transportation Officials (AASHTO) definition of Resilience

**do any analysis as needed from TPSIS or corridor plan here**, based on of the judgment of the climate change SME. For instance, if the corridor plan is outdated, consider updating climate risk information.

Identify if the proposed project area is determined to be at risk to any climate stressors over the anticipated design life of the project the for the following:

- Changes in Temperature       Changes in Precipitation
- Wildfire     Sea Level Rise     Storm Surge     Cliff Retreat

Data sources that indicate climate risk – select all that apply:

- Caltrans Climate Change Vulnerability Assessment
- District Adaptation Priority Report
- Other climate sources (list any used; e.g., Cal-Adapt.org; CalFIRE Fire Hazard Severity Zones Map; etc.)
- Corridor Plan or other system plan
- TPSIS
- Other district study or plan (e.g., coastal hazards planning study or feasibility study)

## Section 1.2 – Asset Types, Adaptation Priority Report, and Consequence

Please note that the [attached Appendix](#) provides detailed directions for completing this section; it is recommended to consult the Appendix to complete.

The following assets identified in Section 1.1 (through the Adaptation Priority Reports) within the project limits are anticipated to be at risk of impact due to identified climate stressors (**populate table with requested information**):

Asset Type	Asset PM Location (begin/end PM, if necessary)	Climate Risk/Stressor(s)	Climate Stressor Score & Priority (note all)

### Consequence evaluation

Please summarize anticipated consequences of the climate stressors to the project area. The district Adaptation Priority Report is a source of data for this; understanding the data that has contributed to an asset's elevated priority-level in the Adaptation Priority Report is critical to characterize climate vulnerability and consequence. In this section, consider community and economic impacts, such as detour length around vulnerable assets. **The level of consequence of climate impacts should be considered when developing project alternatives that address identified climate vulnerabilities.**

If sea level rise is identified during this section as a climate risk to assets in the proposed project location, please be sure to complete Section 2.

Once complete, if Section 2 is not required, move on to Section 3 on Adaptation Alternatives.

## Section 2: Coastal Adaptation

When scoping projects on the external coast or tidally influence areas including San Francisco Bay and Delta, the approach outlined in Section 1 applies, but with several additional datasets relevant to assessing coastal climate exposure and risk in project initiation. This section provides an overview of what to look for and how to access the data, depending on the location of the project.

Information used in Section 1 should be used here, including the design life of assets to correspond to what sea level rise projections are evaluated.

### Section 2.1 – Coastal Permitting History

Please note that the [attached Appendix](#) provide detailed directions for completing this section; it is recommended to consult the Appendix to complete.

- Is the project located in an area where permits were received in the past?
- Are there outstanding permit conditions related to climate hazards?

### Section 2.2 – Tide Gauge and Sea Level Rise Determination

Please note that the [attached Appendix](#) provide detailed directions for completing this section; it is recommended to consult the Appendix to complete.

Identify the nearest tide gauge closet to the project location.

- What are the Intermediate, Intermediate-High, and High sea level rise projections that are outlined for that tide gauge location that relate to the project's expected timeline?

Tide Gauge:

Year (by decade) associated with projected project lifetime	Scenario Range	SLR Projection Value
20XX	<b>Intermediate</b>	
20XX	<b>Intermediate-High</b>	
20XX	<b>High</b>	

### **Section 2.3 – Sea Level Rise Exposure (State Highway System)**

Please note that the [attached Appendix](#) provide detailed directions for completing this section; it is recommended to consult the Appendix to complete.

- What are the exposure results for project asset(s) on the SHS regarding SLR, Storm Surge, and Cliff Retreat that correspond to the appropriate sea level rise values identified in Section 2.2?

### **Section 2.4 – Sea Level Rise Exposure (Off State Highway System)**

Please note that the [attached Appendix](#) provide detailed directions for completing this section; it is recommended to consult the Appendix to complete.

- What are the exposure results for project asset(s) regarding off the SHS regarding SLR, Storm Surge, and Cliff Retreat that correspond to the appropriate sea level rise values identified in Section 2.2?

### **Section 2.5 – Other Sea Level Rise-associated Hazards and Data Resources**

This section addresses data sources to fully assess flood risk in addition to SLR, including FEMA floodplains, groundwater emergence from sea level rise, and coastal squeeze risk. These impacts should be considered on top of baseline sea level rise projections to fully understand coastal climate risk to a project area.

Please note that the [attached Appendix](#) provide detailed directions for completing this section; it is recommended to consult the Appendix to complete.

- What are the flooding risks associated with SLR, including FEMA floodplains, groundwater emergence, and coastal squeeze?
- Is the project area located in or adjacent to an identified floodplain (100-year flood data)?

## Section 3 – Adaptation Alternatives

Please note that the [attached Appendix](#) provides directions for completing this section; it is recommended to consult the Appendix to complete.

List potential adaptation alternatives/ project feature(s) for design consideration pursuant to each applicable climate stressor. If no adaptation alternative is included, please include reasoning (consider risk aversion tolerance). Please note, certain projects may not require adaptation solutions for all climate stressors present. Example: signage projects may only need to consider wildfire and resilient material types to properly adapt. Example: pavement projects may not need to consider extreme heat, unless complete streets components are included.

When analyzing adaptation alternatives, consider the design description of the proposed asset in the context of the project (i.e., length of bridge, diameter of culvert, lane count, guardrail material type, etc.) This can be found in Section 1 of the PIR Template (introduction, work description, and summary table).

Adaptation measures should be chosen to align with the design life or expected lifetime of the assets at risk to projected climate impacts for this project. Given this, based on major assets at risk, select what time horizon adaptation alternatives are considered for:

0-10 Yrs    11-25 Yrs    26 – 50 Yrs    50 – 74 Yrs    75+ Yrs

In the below narratives, include the following information:

1. Identified climate impacts to the project location, including narrative on risk and how it will impact the project.
2. Any priority assets identified in the APRs and why they are a high priority.
3. Other factors relevant for the project area including users of the project area, availability of alternative routes, economic concerns, natural resource concerns, and type of project/assets (leverage consequence analysis above and consider risk aversion):

Temperature Change (including pavement, complete street elements and extreme heat days)

Adaptation Alternative(s):

*Cool Pavement: Using light-colored asphalt, the cool pavement will reflect more solar radiation thereby absorbing less heat compared to darker materials. Reducing the heat absorption will lead to lower pavement surface and air temperatures.*

*Drought Resistant Landscaping: Cooling the surrounding environment by providing shade to adjacent buildings and pavement. Pavement can be heated to temperatures far above that of the surrounding areas, creating "heat area" therefore adding vegetation such as trees and plants can help with cooling.*

Precipitation Change (e.g., riverine flooding, increase in extreme precipitation through rain or snow, drought conditions)

Adaptation Alternative(s):

*Drainage Improvement:*

*Bioretention Basins can help mitigate stormwater flooding impacts by serving as an absorbent catchment for stormwater. Storm water runoff from the Intersection will be carried to a receiving body of water without being combined with wastewater.*

*Permeable Pavers can create a more penetrable structure than traditional pavement, allowing the water to infiltrate into the system rather than needing more horizontal drainage.*

Wildfire Risk

Adaptation Alternative(s):

*Vegetation-free zone along pavement edge: Creating an area along the pavement edge without any vegetation can prevent fires from starting near the road and spreading. Planting vegetation far enough from the road and is known to be fire tolerant can also be helpful.*

*Guardrail and Signpost Replacement: Replacing the wooden guardrail posts and signposts with metal materials so it is less likely to be affected by the fires.*

Sea Level Rise  Cliff Retreat  Storm Surge

\*\*\*Please note that all projects must consider an accommodate or retreat adaptation alternative at this stage for sea level rise that would move forward for technical analysis later in Project Delivery. If those options are not identified in this section, it must be clearly acknowledged and explained, for instance if previous technical analysis has already narrowed the adaptation options for a project.

Adaptation Alternative(s):

According to Caltrans Climate Change Vulnerability Assessment Map, the Alpine Road Corridor project is not identified as at risk for sea level rise. Due to this identification, no further adaptation alternative is needed for sea level rise.

## Appendix: Guidance to complete report

Orientation to Appendix: This appendix copies the template above, followed by directions on how to complete each section. The sections are labeled as follows: **Report section**, and **Directions** to differentiate throughout.

### Introduction

Executive Order B-30-15, signed by Governor Brown states that the agency will take climate change into account in planning and investment decisions and employ full life-cycle cost accounting to evaluate and compare infrastructure investments and alternatives. Priority should be given to actions that both build climate preparedness and reduce greenhouse gas emissions; flexible and adaptive approaches should be taken to prepare for uncertain climate impacts; natural infrastructure solutions should be prioritized; and proposed actions should protect the state's most vulnerable populations. *Ensuring careful considerations of climate change and related impacts during the scoping process is an important step to ensuring Caltrans projects align with this executive order, other state legislation, and department policies to address climate change.*

### Preliminary Climate Change Screening

**Report section:**

#### 1. Coastal Jurisdiction Boundary Determination

Is any portion of the proposed Project limits within the Coastal Zone (external coast or San Francisco Bay) or Legal Delta?

Yes- The project location is within the \_\_\_\_\_ jurisdiction.

(if yes, Section 1 and 2 in Report must be completed)

No

#### 1. Was the project location or asset(s) within the project scope identified to be at

**preliminary risk to any climate stressors over the anticipated design life of the project in the following assessments?**

Caltrans Climate Change Vulnerability Assessments

Yes                       No                      If yes, identify climate stressor(s):

Caltrans Adaptation Priority Reports

Yes                       No                      If yes, list number of asset(s) identified:

**2. Have the following documents/plans been scoped for climate change considerations? Check all that apply.**

Transportation Planning Scoping Information Sheet (TPSIS) – attach TPSIS to Climate Change Report

Corridor Plan(s) – include if applicable

If the documents above **have** addressed climate change considerations, but further climate change analysis is needed (based off screening criteria), please leverage that information in completing sections 1, 2, and 3 of the Report and ensure that information is updated, accurate, and complete to account for all climate risks and adaptation considerations. If the documents **have not** addressed climate considerations but the SHS and/or assets are shown to be at risk in the Vulnerability Assessments and/or Adaptation Priority Reports, please complete sections 1, 2, and 3 in full to adequately scope for climate change considerations.

**Directions:**

**1. Coastal Jurisdiction Boundary Determination**

Determine if the proposed project falls within any of the 3 coastal boundaries defined below. **If the project is located within (or partially within) a coastal zone boundary, Section 2 of the Report must be completed.**

**Coastal Zone Identification:** Go to the [Caltrans Division of Environmental Analysis GIS viewer](#) and navigate to the General tab. Select the Coastal Zone, Poly layer to identify whether the project location (or portion of the project location) is located within the coastal zone. To determine whether the project falls within a Local Coastal Program jurisdiction, select Local Coastal Program Areas (also under the Coastal Tab). Additional follow-up with Caltrans Environmental staff or Coastal Commission staff may be required for official boundary determinations and permitting jurisdiction for a proposed project which will be necessary for PIR TEMPLATE Section 12. ENVIRONMENTAL COMPLIANCE.

**Bay Area Conservation and Development Commission Zone Identification:**

Go to the DEA GIS Library and navigate to the Water Tab. Select the SF Bay Conservation and Develop. Commission BCDC layer. Identify whether the project location or partial project location is located within the zone.

**Legal Delta Zone Identification:** Go to the DEA GIS Library and navigate to the Water Tab. Turn on the Legal Delta Boundary Layer and identify whether the project location (or partial project location) is located within the zone.

- 2. Was the project location or asset(s) within the project scope identified to be at preliminary risk to any climate stressors over the anticipated design life of the project in the following assessments?**
  
- 3. Have the following documents/plans been scoped for climate change considerations? Check all that apply.**

The California Transportation Commission has adopted asset classes associated with the State Highway System. Primary Asset Classes are defined as: (a) Pavement, (b) Bridges, (c) Culverts, and (d) Transportation Management Systems. Design lives of pavement projects are referenced in Chapter 612, and maintenance free service life of culverts (typically 50-years) referenced in chapter 850 of the Highway Design Manual (HDM). Bridge Design Life (per AASHTO LRFD Bridge Design Specifications 8th Edition Sec. 1.3.2.2) is 75 years. Please reference chapters 612, 850, and 880-13 of the HDM and AASHTO LRFD Bridge Design Specifications for additional guidance.

The Division of Environmental Analysis GIS Library has multiple datasets that can be utilized to complete the screening. Climate Change Vulnerability Assessment, Adaptation Priority Reports, Fire Hazard Severity Zones, 2023 SHSMP SLR, and Corridor Plan data can be viewed using the [DEA GIS Library](#).

To identify whether the proposed project location is at risk of one or more climate stressors over the projected lifetime of the project, as identified by the **Caltrans Climate Change Vulnerability Assessments:**

- Step 1: Open the [DEA GIS Library](#)
- Step 2: Select the 'Climate' tab located on the top row of datasets located to the right of the viewer.

- Step 3: Select the 'CT VA' tab from the bottom row of datasets located to the right of the viewer.
- Step 4: Toggle on and off the climate related stressors to understand the climate risk at the proposed project location.

To identify whether a **corridor plan** (or other system plan or technical study) has been completed at the project location:

- Step 1: Consult with District System Planners to identify any relevant plans, including corridor plans or technical studies for the project area. You may also check the [DEA GIS Library](#)
- Step 2: Select the 'CT' tab located on the top row of datasets located to the right of the viewer.
- Step 3: Select the 'Transportation' tab from the bottom row of datasets located to the right of the viewer.
- Step 4: Scroll to the 'Caltrans Corridor Plan' layer and toggle the layer on. Green polylines represent a completed corridor plan. Please check the attributes on the left side of the viewer to confirm whether the corridor plan has been completed, pending future updates to symbology. Additionally, work with District System Planners, as needed.

## Section 1: Climate Exposure

Section 1 focuses on identifying previous climate-related work analyzed at the project location, understanding project design life, analyzing climate vulnerabilities, and suggesting potential adaptation alternatives to address climate stressors within the project limits.

Complete the following steps to identify climate stressors that should be considered in the project scoping/project initiation document phase:

### Section 1.1 – Evaluate Baseline Climate Risks

#### Report Section 1.1

Building on the screening results, identify projected climate change risks to all asset(s) within the proposed project location over the anticipated design life of the project. If this information has been previously identified per the screening above (via District Vulnerability Assessment, District Adaptation Priority Report, relevant Corridor Plan, and/or the Transportation Scoping and Information Sheet (TPSIS)) summarize the information below and cite the sources. **Augment or re-do any analysis as needed from TPSIS or corridor plan here**, based on

judgement of climate change SME. For instance, if corridor plan is outdated, consider updating climate risk information.

Identify if the proposed project area is determined to be at risk to any climate stressors over the anticipated design life of the project the for the following:

- Changes in Temperature     Changes in Precipitation
- Wildfire     Sea Level Rise     Storm Surge     Cliff Retreat

Data sources that indicate climate risk – select all that apply:

- Caltrans Climate Change Vulnerability Assessment
- District Adaptation Priority Report
- Other climate sources (list any used; e.g., Cal-Adapt.org; CalFIRE Fire Hazard Severity Zones Map; etc.)
- Corridor Plan or other system plan
- TPSIS
- Other district study or plan (e.g., coastal hazards planning study or feasibility study)

If sea level rise is identified during this section as a climate risk to assets in the proposed project location, please be sure to complete Section 2.

### Directions

The Division of Environmental Analysis GIS Library has multiple datasets that can be utilized to complete this section. Climate Change Vulnerability Assessment, Adaptation Priority Reports, Fire Hazard Severity Zones, 2023 SHSMP SLR, and Corridor Plan data can be viewed using the [DEA GIS Library](#). **Step by step information on accessing key datasets is provided above under the Screening.**

**Please consider the quality of any prior analysis conducted, including how outdated a document or plan may be.** This may not have been done in the initial screening. If deemed inadequate, please consider re-doing the analysis and augmenting with other data sources in this section.

## Section 1.2 – Asset Types, Adaptation Priority Report, and Consequence

### Report section 1.2

The following assets identified in 1.1. within the project limits are anticipated to be at risk of impact due to identified climate stressors (**populate table with requested information**):

Asset Type	Asset PM Location	Climate Risk/Stressor(s)	Climate Stressor Score & Priority (note all)

### Consequence evaluation

Please summarize anticipated consequences of the climate stressors to the project area. The district Adaptation Priority Report is a source of data for this; understanding the data that has contributed to an asset's elevated priority-level in the Adaptation Priority Report is critical to characterize climate vulnerability and consequence. In this section, consider community and economic impacts, such as detour length around vulnerable assets. **The level of consequence of climate impacts should be considered when developing project alternatives that address identified climate vulnerabilities.**

### Directions

This section of the Appendix walks a user through how to use the Adaptation Priority Reports datasets in PID analysis. Utilize the Adaptation Priority Reports (APRs) to identify climate risk for assets included within project scope (including if priority 1 or 2 assets are potentially compromised), and to evaluate potential consequence of the climate impact(s) to the project area.

If this analysis has been completed in the TPSIS, please summarize findings and augment as needed.

First, identify the **asset(s) types** located within the proposed project location. Identification of assets will assist in understanding the cost, scope, and schedule of the project in more detail. In this section, identify whether the asset is a bridge, culvert, roadbed, guardrail, bike and pedestrian infrastructure, or an additional asset not listed. Secondarily, list the associated post mile information. If the asset (such as a roadbed, bridge, or guardrail) stretches over an extended

length of the project location, list the start and end postmiles. Repeat for all major assets within the proposed project location.

Consult the Adaptation Priority Reports to identify the climate stressors for any given asset and the associated stressor score. Detailed directions on this follow below. Please note, if new assets are being implemented at the project locations, they will not be present in the Adaptation Priority Report. Please use “NA” as needed when completing the table.

Postmiles can be viewed on the DEA GIS Library within Tools icon in upper right in the drop-down “PM Tools” toolset.

To identify the **Postmile(s)** or to visualize identified project postmile extents associated with asset(s) at the project location:

- Step 1: Open the Caltrans DEA GIS Library
- Step 2: Zoom to and click on the SHS at the location of desired postmile information, or select the “PM to XY” tab and enter in the known Postmile information
- Step 3: Record the output Postmile information (County, Route, and Postmile) into the PIR template
  - Please use the [PM Query Tool](#) to supplement as backup

Using the District Adaptation Priority Report:

**About:** The Adaptation Priority Reports (APRs) are District-specific reports that build upon what was identified in the Caltrans Climate Vulnerability Assessments (VAs) by assessing which vulnerable Caltrans assets are expected to require the most immediate adaptation measures. **These reports consider an array of climate exposure and consequence metrics applied to roadway and drainage assets to calculate a priority level between one and five, with higher priority assets requiring the most immediate attention<sup>3</sup>.** The APRs are also available spatially as a data source layer in the DEA GIS Library.

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<sup>3</sup> Note that the APRs have the same data limitations detailed above for the VAs. Only a small sub-set of culverts were evaluated for climate exposure and under-reflect culverts that likely have a climate risk. In addition, the scoring in these reports do not consider equity, coastal resources, adjacent land uses, or local or regional priorities, which may be additional factors to consider when developing the project description and potential adaptation strategies. As such, it is critical to understand the metrics and methodology presented in the Adaptation Priorities Reports, as other data resources (further detailed in Sections 1 and 2) may need to be consulted for a more informed understanding on vulnerability and prioritization.

The data explaining priority ranking of all assets in the District APRs can be found in the associated [District APR spreadsheet](#). Further explanation of how to navigate this spreadsheet is provided below.

**Overview of APR Analysis**

To further characterize the vulnerability of roadway and drainage assets including bridges and large and small culverts using the APRs, it is important to know which climate change stressors are analyzed for each of these asset types. APRs for coastal Districts (including 3 and 10 which are partially within the Sacramento-San Joaquin Delta) will have incorporated an analysis for all climate change stressors, while inland Districts (2, 6, 8, & 9) will not have analyzed any coastal hazards which include sea level rise, storm surge, and cliff retreat. The following table details which stressors are analyzed for each of these 4 asset types.

<b>Asset Type</b>	<b>Climate Stressors Analyzed</b>
Roadways	Extreme Temperatures, Sea Level Rise, Storm Surge, Cliff Retreat
Bridges	Sea Level Rise, Storm Surge, Cliff Retreat, Riverine Flooding
Large Culverts	Sea Level Rise, Storm Surge, Cliff Retreat, Riverine Flooding
Small Culverts	Sea Level Rise, Storm Surge, Cliff Retreat, Wildfire, Riverine Flooding

While the Adaptation Priorities Reports will not contain details for all climate impacts at a given location, they represent a helpful starting point in determining potential climate vulnerabilities of a project area.

**Navigating APR data in GIS and in the APR spreadsheet:**

Potential climate vulnerabilities of State transportation assets with the District APRs may be characterized further by following these steps:

1. **Locate vulnerable assets** within a project area spatially using the CT APR layers in the DEA GIS library. This can be done by selecting the Climate tab in the GIS Library pane and then selecting CT APR.
  - a. More details for each asset can be accessed by clicking on the individual asset symbols on the map.
    - i. It may be helpful to make a note of the priority-level of these assets in this stage, as the priority-level will be denoted by color coding on the map with red symbols representing priority-1 assets.
  - b. Note that if an asset does not appear in the DEA GIS Library or the Adaptation Priorities Report, then that asset has been determined to be *not* vulnerable to the climate impacts

included based on the analysis presented in the APRs. **This does not necessarily mean that the asset has no climate change vulnerability** – if there is reason to believe that climate change impacts may occur at a given location, then further analysis may still be carried out using other relevant data sources (e.g., Cal-Adapt.org).

2. Find any assets identified in the DEA GIS library in the associated APR spreadsheet, with each row in the spreadsheet representing all available data for each vulnerable asset.
  - a. Utilizing filters and sorting with the dropdown arrow next to the column headers may be helpful for locating these assets in the tables due to the size of these spreadsheets.
  - b. Each District APR spreadsheet has a tab for each of the 4 asset-types analyzed in the District APR.
  
3. Once the rows for each of the assets in the project area have been found, **identify which climate change stressors are present for these assets** in the Climate Change Stressor Vulnerabilities section in the spreadsheet. **Assets with a high stressor score should be noted, and considered for project alternatives or adaptation strategies.**
  - a. These values are calculated by synthesizing all climate change metrics analyzed and then normalized from 0 to 100, with a score of 100 representing the highest vulnerability level in the District. This information will be a good starting point for understanding whether an asset is vulnerable to any climate stressors analyzed in the APRs for that asset type.
    - i. Stressor values of >20 will have a relatively high vulnerability to that particular stressor, these values have been highlighted in **red** in the APR spreadsheet.
    - ii. Assets which have any stressor scores greater than 10 but less than 20 have been highlighted **yellow** in the spreadsheet and may also be vulnerable to those climate stressors, but may require further investigation to determine the level of vulnerability to those stressors.

CLIMATE CHANGE STRESSOR VULNERABILITIES				
Sea Level Rise	Storm Surge	Cliff Retreat	Riverine Flooding	
73.52583015	65.32539851	0	0	
26.25878149	26.98859717	57.75983373	17.39070421	
63.08763912	53.77996992	0	8.699563015	
46.99273768	13.04281377	0	64.33543345	
58.43250596	50.34648525	0	1.691322957	

**Screenshot Description:** This screenshot displays various climate stressor values for bridges and shows several stressor scores that are >20 highlighted in red, as well as a few slightly lower stressor score highlighted in yellow.

4. **Consequence Evaluation:** Once vulnerabilities are identified in the Climate Change Stressor Vulnerabilities Section, scroll to the right in the spreadsheet to find the section for each climate change stressor that the asset has been determined to be vulnerable to. **These sections include metrics that have contributed to those heightened stressor vulnerability scores, and assist in understanding when impact is expected and other impacts from the stressor.**
  - a. Some metrics are exposure-based, meaning they represent the exposure of the asset to climate change impacts, such as modeled increases in precipitation or wildfire at that location.
  - b. Other metrics measure consequence, meaning that they consider the consequence of the climate impact to the asset, for instance through considering asset condition or user impacts like detour distance. These metrics are defined in more detail in the Column Definitions tab at the bottom of the spreadsheet, or in the District Reports themselves.
    - i. Note that the data for AADT, AADTT, and any condition ratings used in the APR Spreadsheets were retrieved in 2020 or earlier, so be aware that these metrics may not represent the most current information in Caltrans. If an asset has a low condition rating in the spreadsheet and you suspect that the information is no longer accurate, you should seek further information from relevant District staff to obtain the most recent data available.

STORM SURGE				
Past Impacts from SS	Minimum SLR and 100yr Storm_SS	Detour Length	Minimum SLR_SS	Detour Length Maximum SLR_SS
No	000		38.09135056	-1.950101137
No	100		10.92514133	10.92514133
No	000		50.08610916	32.90000153
Yes				
No	000		0.128766119	0.128766119

**Screenshot Description:** This screenshot displays various metrics for Storm Surge on the same set of bridges seen in the previous screenshot. These are the metrics that had contributed to the heightened Storm Surge stressor scores for several of these bridges, though a section is available for all climate stressors analyzed for each asset type. Each column is a singular metric that has been determined to contribute to the vulnerability of an identified asset to that particular stressor.

Understanding the data that has contributed to an asset's elevated priority-level will be critical in characterizing climate vulnerabilities with these products. In the Consequence Evaluation, consider community and economic impacts, such as detour length around vulnerable assets. **The level of consequence of climate impacts should be considered when developing project alternatives that address identified climate vulnerabilities.**

**Sample Consequence Descriptions:**

Consequence Level	Example Description
Low consequence, limited scale, and scope	Climate-related disruptions would only affect a few users who travel on this segment and would not lead to disruptions beyond this asset. This may include impacts that require partial closures, short detours around affected assets, or minor actions that can be quickly carried out by District Maintenance staff.
Moderate to high consequence, but limited in scope and scale	Climate-related disruptions along this route would affect commuters and students traveling to the local school and nearby businesses. This may include impacts that require rerouting users and trucks long distances to reach their destinations or will require long-term closures to fully address impacts and return the transportation system to full operation.
Unacceptable consequence and/or extensive scale and scope	With largescale climate risk, thousands of daily users would lose access to this key route, cutting off commuters from the key economic center and creating difficulty for emergency responders to access the more remote surrounding communities. These are impacts that may require long-term closures and rerouting of a large number of users away from affected areas of key regional corridors and may necessitate a redesign of the roadway system at the impacted location to fully address impacts. Locations in urban centers or areas with no viable detour route will have a very high-level consequence should the roadway be affected by climate change impacts.

## Section 2: Coastal Adaptation

When scoping projects on the external coast or tidally influence areas including San Francisco Bay and Delta, the approach outlined in Section I applies, but with several additional datasets relevant to assessing coastal climate exposure and risk in project initiation. This section provides an overview of what to look for and how to access the data, depending on the location of the project.

Information gathered in Section 1 should be used here, specifically the design life of assets to correspond to what sea level rise projections are evaluated.

### Section 2.1 – Coastal Permitting History

#### Report section 2.1

- Is the project located in an area where permits were received in the past?
- Are there outstanding permit conditions related to climate hazards?

#### Directions

Projects must evaluate if there are applicable permits tied to project location as this will need to be further evaluated in PAED. Evaluating permit history assists with understanding the potentially applicable permit special conditions which may inform the development of appropriate adaptation strategies.

Step 1 – Go to the Coastal Commission Staff Report Review Tool on Onramp: <https://env.onramp.dot.ca.gov/coastal-commission-staff-report>

Step 2 – Review list of permits received on the excel spreadsheet and evaluate whether the proposed project location will be in a location where there are outstanding permits.

Step 3 – Note the opportunity to coordinate with the District Coastal Liaisons or the HQ DEA Coastal Program Manager for further assistance with determining whether there are outstanding permits and what follow-up is required within the project area location.

### Section 2.2 – Tide Gauge and Sea Level Rise Scenario Identification

#### Report section 2.2

Identify the nearest tide gauge closet to the project location.

- What are the Intermediate, Intermediate-High, and High sea level rise projections that are outlined for that tide gauge location that relate to the project's expected timeline?

Tide Gauge:		
Year (by decade) associated with projected project lifetime	Scenario Range	SLR Projection Value
20XX	<b>Intermediate</b>	
20XX	<b>Intermediate-High</b>	
20XX	<b>High</b>	

## Directions

Assessing future sea level rise values requires looking at projections for the tide gauge closest to your project location. The values identified in this section will be carried through the rest of this analysis.

Step 1 - On this portal, locate the tide gauge closest to the project area and click on it. <https://sealevel.nasa.gov/task-force-scenario-tool>

If your project area is between and/or close to two tide gauges, please consider both and average the values.

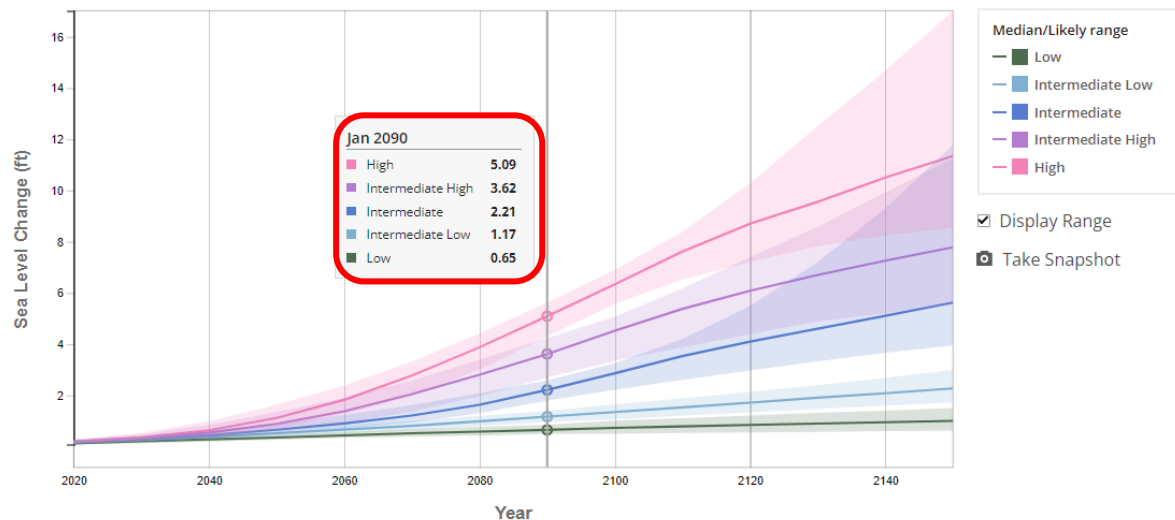
Step 2 – Identify and document projection amounts that correspond to the project's expected lifetime (outcomes from Section 1) for the Intermediate, Intermediate-High, and High sea level rise scenarios. These scenarios correspond to values on the chart (see example below) displayed for each tide gauge.

If project life is shorter than 2050, evaluate only the Intermediate scenario.

Step 3 – The values identified here will be used for each of the following sections. Please note that the values may not align perfectly (e.g., 2.3 ft vs. 2.5 ft; please use *the closest corresponding sea level rise value* in the following sections.

## Sea Level Rise for Different Sea Level Scenarios

Depicted here are sea level change time series for the 5 sea level scenarios: low, intermediate-low, intermediate, intermediate-high and high. These scenarios are defined by a target global mean sea level (GMSL) values in 2100. Median values are provided for each scenario, along with likely ranges represented by shaded regions showing the 17<sup>th</sup>-83<sup>rd</sup> percentile ranges. For comparison to the model-based scenarios and as an additional line of evidence, extrapolations of available tide gauge observations are also provided. Rates and accelerations are estimated from tide gauge observations from 1970 to 2020 and then extrapolated to 2050 (see here for more info). For individual tide gauges, unresolved local variations or gaps in the tide gauge sampling may cause substantial departure from the modeled-scenarios in some locations. For tide gauges with record lengths shorter than 30 years, observation extrapolations are not shown. All values are relative to a baseline year of 2000. Data for the individual contributions can be downloaded under 'Get Data'.



**Screenshot Description:** Example of data to determine sea level rise values on the federal Interagency Sea Level Rise Scenario Tool <https://sealevel.nasa.gov/task-force-scenario-tool>

## Section 2.3 – Evaluate Sea Level Rise Exposure (State Highway System)

### Report section 2.3

- What are the exposure results for project asset(s) on the SHS regarding SLR, Storm Surge, and Cliff Retreat that correspond to the appropriate sea level rise values identified in Section 2.2?

### Directions

As described in Section 1, use existing Caltrans sea level rise exposure analyses to document exposure for the project area along the State Highway System (SHS). SHS is called out separately because the data sources vary.

- The sources in Section 1 (Vulnerability Assessments, Adaptation Priority Reports) can be used for roadways, bridges, and culverts on the State Highway System, along with the SHSMP SLR 2023 Data<sup>4</sup>.
- If your project includes assets not on the State Highway System, see Section 2.4.

Step 1 – All three data sources are available in the DEA GIS Library, under the Climate Tab. Start with SHSMP SLR (2023) data layer for the most up to date analysis.

Step 2 – Select and document exposure results for project asset(s) for SLR, Storm Surge, and Cliff Retreat for appropriate sea level rise values identified in Section 2.2. Please document the lowest SLR value when cliff retreat would impact the project and the scenario and year associated with this scenario (e.g., cliff retreat impacts projected by 2050; this may require looking back at the Interagency Sea Level Rise Scenario Tool for the year). List the vulnerable asset(s) and associated PM location.

Please note if project is in the Legal Delta, analysis for the State Highway System should be augmented with data provided for the Delta as noted below in Section 2.4 (Bay/Delta SLR tab DSM2).

## **Section 2.4 – Evaluate Sea Level Rise Exposure (Off State Highway System)**

### **Report section 2.4**

- What are the exposure results for project asset(s) regarding off the SHS regarding SLR, Storm Surge, and Cliff Retreat that correspond to the appropriate sea level rise values identified in Section 2.2?

### **Directions**

To document exposure for assets or projects off the State Highway System, there are SLR flooding and erosion data sources available that vary depending on

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<sup>4</sup> The 2023 SHSMP is a helpful resource for evaluating exposure for roadways/bridges/culverts since it included an analysis on SLR exposure:

<https://catc.ca.gov/-/media/ctc-media/documents/programs/shopp/2023-shsmp-draft.pdf>

[https://assetmgt.onramp.dot.ca.gov/downloads/assetmgt/files/2023\\_Stwd\\_SHOPP\\_AssetMgr\\_Mtg/SLR%20Analysis%20Summary%2005-04-23.pdf](https://assetmgt.onramp.dot.ca.gov/downloads/assetmgt/files/2023_Stwd_SHOPP_AssetMgr_Mtg/SLR%20Analysis%20Summary%2005-04-23.pdf)

geography. The same information should be provided as in other sections – SLR exposure for appropriate years and scenarios, storm surge, and cliff retreat.

### **Sea Level Rise:**

Step 1 – All data sources are available in the DEA GIS Library, under the Climate Tab.

Step 2 – For the appropriate geography, select and document exposure results for SLR for appropriate sea level rise values identified in Section 2.2.

Geography-based data sources:

- Bay Area – Select the Bay/Delta SLR tab (BCDC). Document findings.
- Legal Delta – Select the Bay/Delta SLR tab (DSM2). Document findings.
- North Coast (D1) – Select the Humboldt Bay SLR and NOAA tabs. Document findings.
- Rest of the Coast – Select the CoSMoS SLR tab. Document findings.

### **Storm Surge and Cliff Retreat – USGS CoSMoS**

Step 1 – All data sources are available in the DEA GIS Library, under the Climate Tab.

Step 2 – Select the CoSMoS SLR layer to evaluate storm surge (100-year storm) and cliff retreat (Cliff Retreat SLR) risk. Select and document 100-year results. Please document the lowest SLR value when storm surge and/or cliff retreat would impact the project and the year associated with this scenario (e.g., cliff retreat impacts projected by 2050). List the vulnerable asset(s) and associated PM location.

## **Section 2.5 – Other Data Resources**

This section walks through data sources to fully assess flood risk in addition to SLR, including FEMA floodplains, groundwater emergence from sea level rise, and coastal squeeze risk. These impacts should be considered on top of baseline sea level rise projections to fully understand coastal climate risk to a project area.

### **Report section 2.5**

- What are the flooding risks associated with SLR, including FEMA floodplains, groundwater emergence, and coastal squeeze?
- Is the project area located in or adjacent to an identified floodplain (100-year flood data)?

## Directions

### **Sub - Section 2.5.1 - FEMA Flood Areas**

Step 1 – Go to the Department of Water Resources' [Best Available Maps](#) displaying FEMA floodplain maps and FIRMs with flood hazard locations for California.

Step 2 – Go to project location and evaluate whether flood risk is identified by the FEMA FIRM map<sup>5</sup>

Step 3 – Document findings and if the asset is located in an area with identified flooding hazards, please list the asset(s) and associated PM location.

### **Sub - Section 2.5.2 - Sea Level Rise and Groundwater**

Step 1 – Go to the DEA GIS Library

Step 2 – Select the Climate tab

Step 3 – Select the CoSMoS SLR layer

Step 4 – Select the appropriate SLR values identified in section 2.2 for the data layer titled "Groundwater SLR" to evaluate whether the project is in an area that could be exposed to groundwater emergence associated with SLR.

Step 5 – Document findings and if the asset is subject to SLR groundwater impacts, please list the asset(s) and associated PM location.

### **Sub - Section 2.5.3 - Coastal Squeeze**

Step 1 – Go to the DEA GIS Library

Step 2 – Select the General tab and then the Coastal tab

Step 3 – Document whether coastal squeeze is potentially present for the project location (yes/no).

## Section 3 – Adaptation Alternatives

### Report section 3

List potential adaptation alternatives/ project feature(s) for design consideration pursuant to each applicable climate stressor. If no adaptation alternative is

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<sup>5</sup> <https://gis.bam.water.ca.gov/bam/>

included, please include reasoning (consider risk aversion tolerance). Please note, certain projects may not require adaptation solutions for all climate stressors present. Example: signage projects may only need to consider wildfire and resilient material types to properly adapt. Example: pavement projects may not need to consider extreme heat, unless complete streets components are included.

When analyzing adaptation alternatives, consider the design description of the proposed asset in the context of the project (i.e., length of bridge, diameter of culvert, lane count, guardrail material type, etc.) This can be found in Section 1 of the PIR Template (introduction, work description, and summary table).

Adaptation measures should be chosen to align with the design life or expected lifetime of the assets at risk to projected climate impacts for this project. Given this, based on major assets at risk, select what time horizon adaptation alternatives are considered for:

0-10 Yrs    11-25 Yrs    26 – 50 Yrs    50 – 74 Yrs    75+ Yrs

In the below narratives, include the following information:

1. Identified climate impacts to the project location, including narrative on risk and how it will impact the project.
2. Any priority assets identified in the APRs and why they are a high priority.
3. Other factors relevant for the project area include users of the project area, availability of alternative routes, economic concerns, natural resource concerns, and type of project/assets (leverage consequence analysis above and consider risk aversion):

Temperature Change (including pavement, complete street elements and extreme heat days)

Adaptation Alternative(s):

Precipitation Change (e.g., riverine flooding, increase in extreme precipitation through rain or snow, drought conditions)

Adaptation Alternative(s):

Wildfire Risk

Adaptation Alternative(s):

Sea Level Rise  Cliff Retreat  Storm Surge

\*\*\*Please note that all projects must consider an accommodate or retreat adaptation alternative at this stage for sea level rise that would move forward for technical analysis later in Project Delivery. If those options are not identified in this section, it must be clearly acknowledged and explained, for instance if previous technical analysis has already narrowed the adaptation options for a project.

Adaptation Alternative(s):

## Directions

When evaluating adaptation alternatives, consider:

- the identified climate impacts at the project location and design life of the assets and expected lifetime of project,
- any priority assets,
- and other factors relevant for the project area, such as users of the project area, environmental resources in the project location, economic concerns, and type of project.

Design descriptions of the proposed asset(s) in the context of the project should be considered (i.e., length of bridge, diameter of culvert, lane count, guardrail material type, etc.) This can be found in Section 1 of the PIR Template (introduction, work description, and summary table). In general, the project expected lifetime should reflect the project component or asset with the longest design life for the purpose of identifying risk to climate stressors.

**In the above context, identify in this section project-level potential adaptation components or alternatives for each stressor to address projected climate impacts that should be resourced for study later in Project Delivery<sup>6</sup>.** Include an explanation of how the alternatives/strategies proposed address exposure to identified climate stressors during lifetime of the project. If no adaptation

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<sup>6</sup> Note that within the PIR Template *Section 12. ENVIRONMENTAL COMPLIANCE* refers to the Preliminary Environmental Analysis Report which contains the *PEAR Environmental Studies Checklist: [Attachment A – PEAR Environmental Studies Checklist \(DOCX\)](#)*. If there is need for a technical study that supports evaluation of a climate change alternative, resources should be allocated for that product within the PIR.

alternative or project component is included, please describe why based on factors mentioned above.

- For sea level rise and coastal strategies: In Section 2, exposure was evaluated for a range of sea level rise scenarios (e.g., Intermediate, Intermediate-High, High) along with storm surge, cliff retreat, and other coastal climate risks; this section must document which scenario(s) the adaptation strategies/alternatives address.

To learn more on the potential adaptation alternatives, consult the **[educational Adaptation Strategies for Transportation Infrastructure](#)** resource for general climate stressor-specific adaptation options, including for the stressors listed in this section. Also consult with District counterparts, as well as HQ divisions (Design, Environmental Analysis, Landscape Architecture, Hydraulics, and Planning) for additional information regarding adaptation alternatives. Project-specific context must be considered; for instance, extreme heat impacts to a roadway may not need to be addressed unless complete street elements are included where human comfort will be impacted.

Furthermore, [directions for Section 1.2](#) on using the Adaptation Priority Reports may assist in identifying features of the project that inform the need for different adaptation alternatives or strategies.

\*\*\*Please note that for sea level rise and cliff retreat, all projects must consider an accommodate or retreat adaptation alternative at this stage that would move forward for technical analysis later in Project Delivery. If those options are not identified in this section, it must be clearly acknowledged and explained, for instance if previous technical analysis has already narrowed the adaptation options for a project.

## **Attachment S**

# **Infrastructure Carbon Estimator – Attachments for Climate Change Risk and Adaption Report (ICE)**

### Greenhouse Gas (GHG) Reduction Measures:

A preliminary estimate of GHG emissions attributed to the proposed project was calculated using the Federal Highways Infrastructure Carbon Estimator (ICE) Tool (Version 2.2.8), the Infrastructure Carbon Estimate (ICE) is included as Attachment S.

Alternative 1 is estimated to generate a total of 531 MTCO<sub>2</sub>e Baseline. Alternative 2 is estimated to generate a total of 1037 MTCO<sub>2</sub>e Baseline. As indicated on the output data generated from the tool inputs, the primary source of emissions is anticipated to be from operations and maintenance for both Alternatives. As all projects are required to implement measures to reduce GHG emissions, potential GHG reduction measures have been reviewed and the following are to be considered for this project.

Proposed GHG reduction measures for this project include:

- Using alternative fuels and vehicle hybridization
- Substituting recycled asphalt pavement for virgin asphalt aggregate.
- Using alternative vegetation management strategies

### Climate Change Risk and Adaptation Measures:

Climate risks identified using Caltrans Climate Change Vulnerability Assessments and TPSIS data indicate the project area faces risks from extreme precipitation, increase in temperature and wildfires. The Caltrans District 4 Adaptation Priorities Report documents several assets at risk in the area, including the project location specified. Potential impacts include disruptions to emergency services, the primary transportation network, and increased vehicle miles traveled due to reroutes.

The project limits designate multiple areas as high or moderate fire hazard severity zones. Wildfire is a current risk for the project limits.

Here are some design adaptation options for the project:

- Using cool pavement, which will reflect more solar radiation and absorb less heat.
- Replace the existing wood MBGR posts with MGS steel posts, which are more fire-resistant.
- Improve drainage by using permeable pavers to create a more penetrable structure than traditional pavement.

The Climate Change Risk and Adaptation Report is included as Attachment R.

### Alpine Road Corridor Improvement Project - Alternative 1

The following charts and tables are for Alternative 1 of the Alpine Road Corridor Improvement Project which proposes signals in existing intersections. The following information is to supplement the Climate Change Risk and Adaption Report.

	Annualized Energy Use		
	mmBTU	mmBTU	mmBTU
	Baseline	BAU	Mitigated
Materials	19	19	19
Transportation	3	3	3
Construction	24	24	24
O&M	153	153	153
Total	198	198	198

	Total Energy Use		
	mmBTU	mmBTU	mmBTU
	Baseline	BAU	Mitigated
Materials	566	566	566
Transportation	90	90	90
Construction	717	717	717
O&M	4,581	4,581	4,581
Total	5,955	5,955	5,955

Cumulative Greenhouse Gas Emissions			
	MT CO2e	MT CO2e	MT CO2e
	Baseline	BAU	Mitigated
Materials	54	54	54
Transportation	8	8	8
Construction	60	60	60
O&M	410	410	410
Total	531	531	531

	Annualized Energy Use		
	mmBTU	mmBTU	mmBTU
	Baseline	BAU	Mitigated
Aggregate	4	4	4
Bitumen (Asphalt Binder)	6	6	6
Cement	4	4	4
Steel	5	5	5
Water	0	0	0
Transportation Fuel	3	3	3
Construction Fuel	24	24	24
O&M fuel (DGEs)	34	34	34
O&M Roadway Rehabilitation	119	119	119
Total	198	198	198

	Annualized Greenhouse Gas Emissions		
	MT CO2e	MT CO2e	MT CO2e
	Baseline	BAU	Mitigated
Aggregate	0	0	0
Bitumen (Asphalt Binder)	0	0	0
Cement	1	1	1
Steel	0	0	0
Water	0	0	0
Transportation Fuel	0	0	0
Construction Fuel	2	2	2
O&M fuel (DGEs)	3	3	3
O&M Roadway Rehabilitation	11	11	11
Total	18	18	18

	Total Energy Use		
	mmBTU	mmBTU	mmBTU
	Baseline	BAU	Mitigated
Aggregate	132	132	132
Bitumen (Asphalt Binder)	186	186	186
Cement	112	112	112
Steel	136	136	136
Water	0	0	0
Transportation Fuel	90	90	90
Construction Fuel	717	717	717
O&M fuel (DGEs)	1,019	1,019	1,019
O&M Roadway Rehabilitation	3,562	3,562	3,562
Total	5,955	5,955	5,955

	Cumulative Greenhouse Gas Emissions		
	MT CO2e	MT CO2e	MT CO2e
	Baseline	BAU	Mitigated
Aggregate	7	7	7
Bitumen (Asphalt Binder)	14	14	14
Cement	21	21	21
Steel	11	11	11
Water	0	0	0
Transportation Fuel	8	8	8
Construction Fuel	60	60	60
O&M fuel (DGEs)	83	83	83
O&M Roadway Rehabilitation	327	327	327
Total	531	531	531

Annualized Energy Use Reduction

mmBTU	mmBTU	mmBTU
Materials	Transportation	Construction

Total

- - -

ns Relative to BAU

mmBTU	mmBTU
O&M	TOTAL

-

-

Annualized Greenhouse Gas Emission R

MT CO2e      MT CO2e      MT CO2e

Materials      Transportation      Construction

Total

-

-

-

Reductions Relative to BAU

MT CO2e	MT CO2e
O&M	TOTAL

-

-

Total Energy Use Reductions		
mmBTU	mmBTU	mmBTU
Materials	Transportation	Construction

Total

- - -

Relative to BAU

mmBTU	mmBTU
O&M	TOTAL

-

-

Cumulative Greenhouse Gas Emission R

MT CO2e      MT CO2e      MT CO2e

Materials      Transportation      Construction

Total

-

-

-

Reductions Relative to BAU

MT CO2e	MT CO2e
O&M	TOTAL

-

-

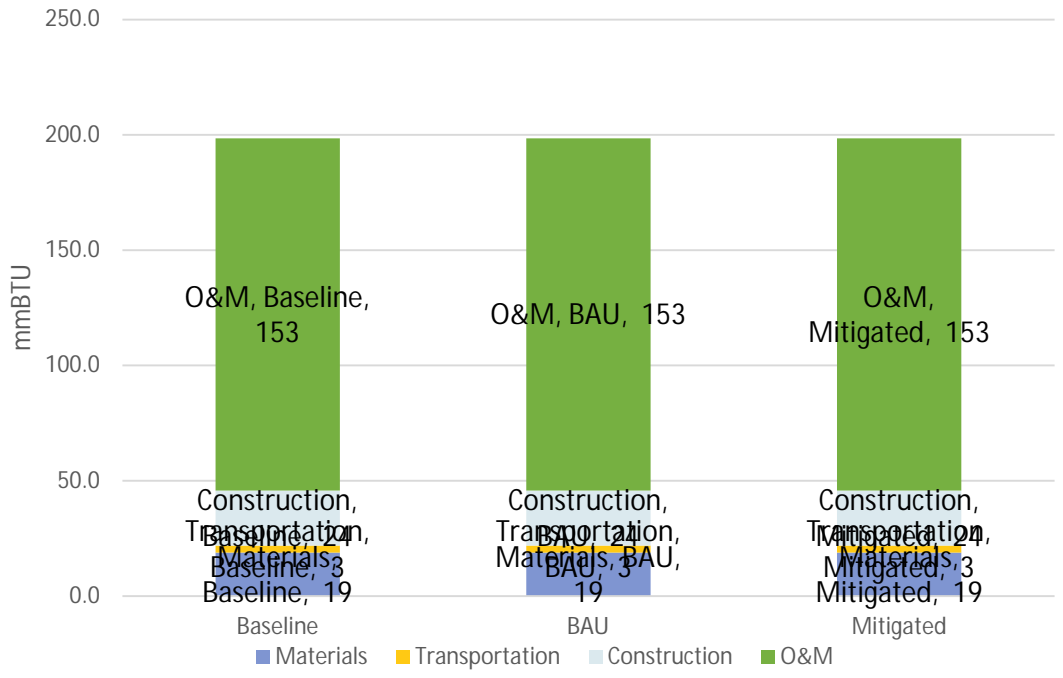
	Annualized Energy Use		
	mmBTU	mmBTU	mmBTU
	Baseline	BAU	Mitigated
Pathways	7	7	7
Roadways	191	191	191
Total	-	-	-

Annualized Greenhouse Gas Emissions			
	MT CO2e	MT CO2e	MT CO2e
	Baseline	BAU	Mitigated
Pathways	1	1	1
Roadways	17	17	17
Total	-	-	-

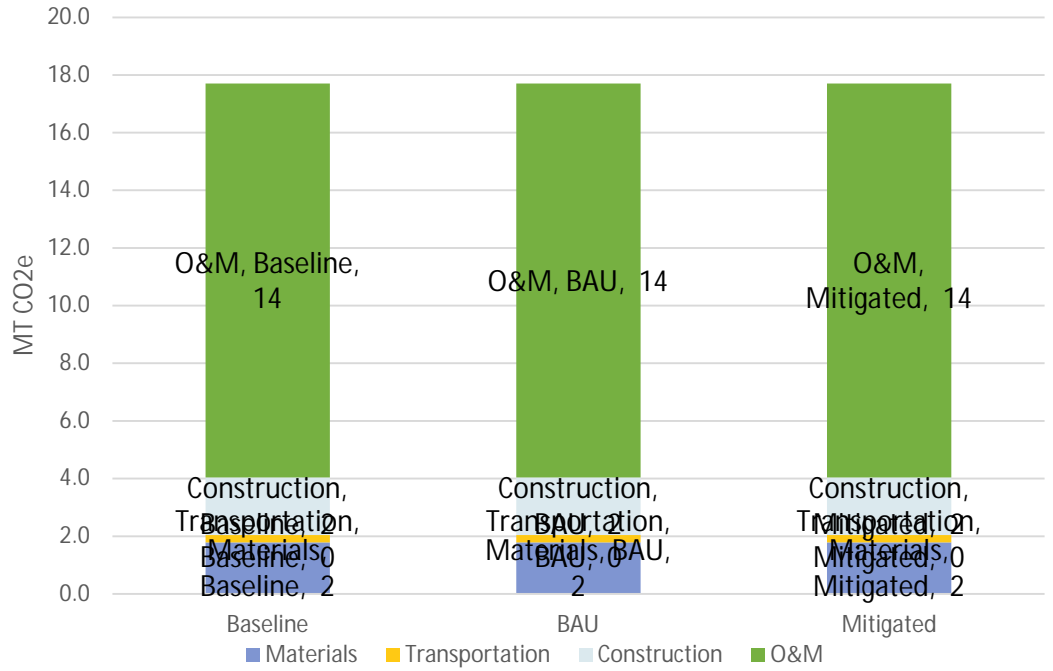
	Total Energy Use		
	mmBTU	mmBTU	mmBTU
	Baseline	BAU	Mitigated
Pathways	215	215	215
Roadways	5,740	5,740	5,740
Total	-	-	-

Cumulative Greenhouse Gas Emissions			
	MT CO2e	MT CO2e	MT CO2e
	Baseline	BAU	Mitigated
Pathways	17	17	17
Roadways	514	514	514
Total	-	-	-

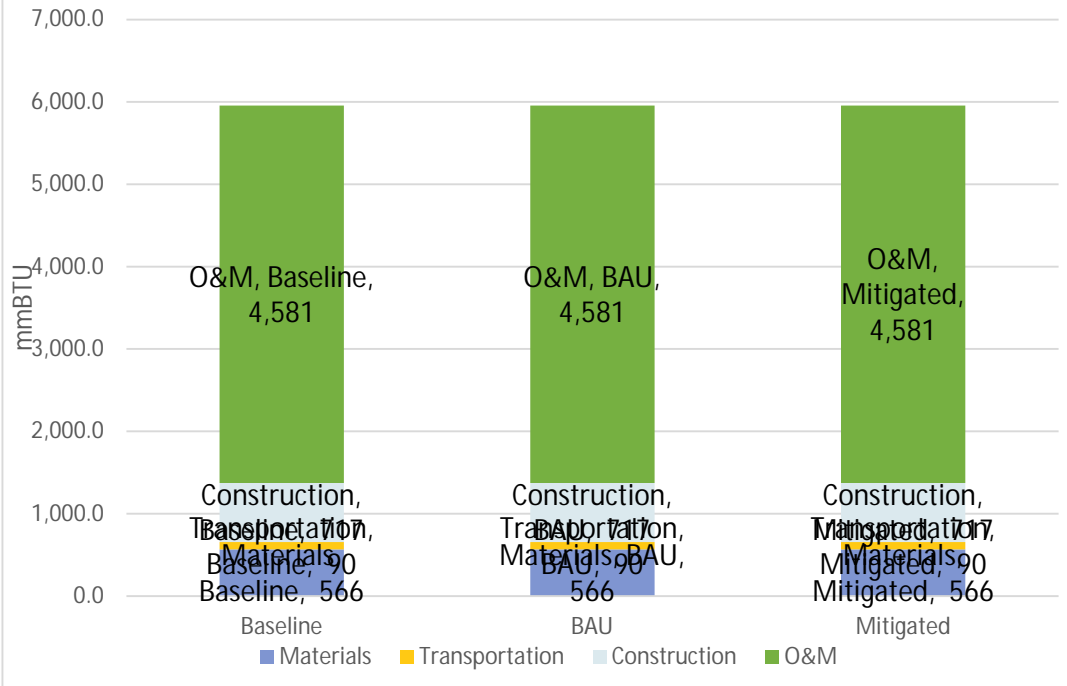
### Annualized Energy Use (mmBTU) by Phase



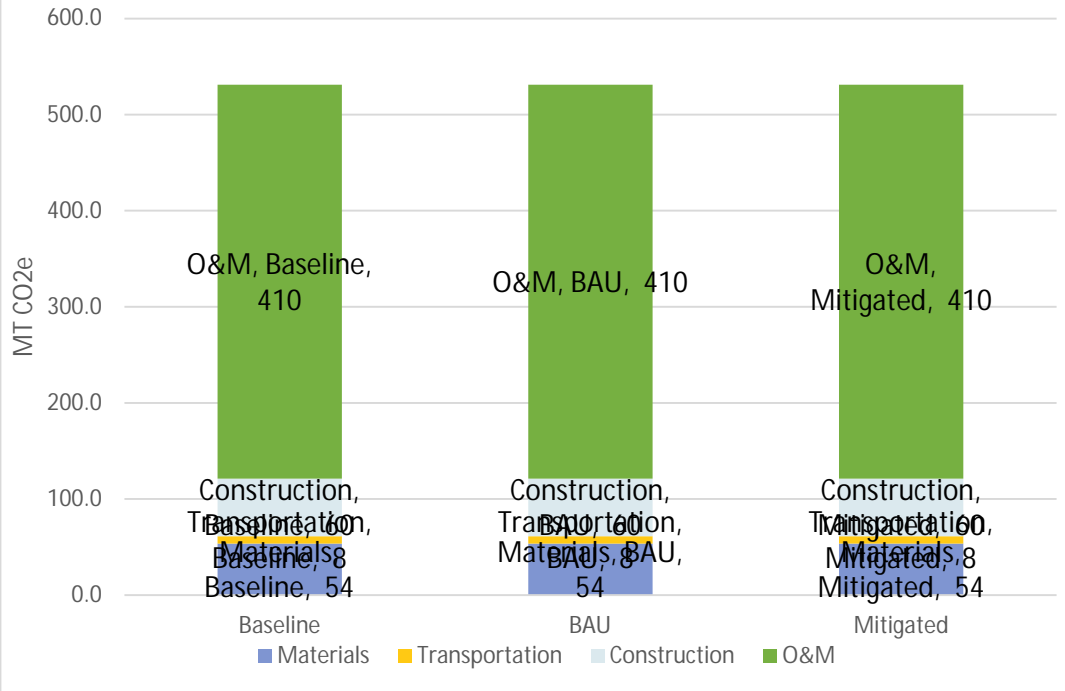
## Annualized Greenhouse Gas Emissions (MT CO2e) by Phase



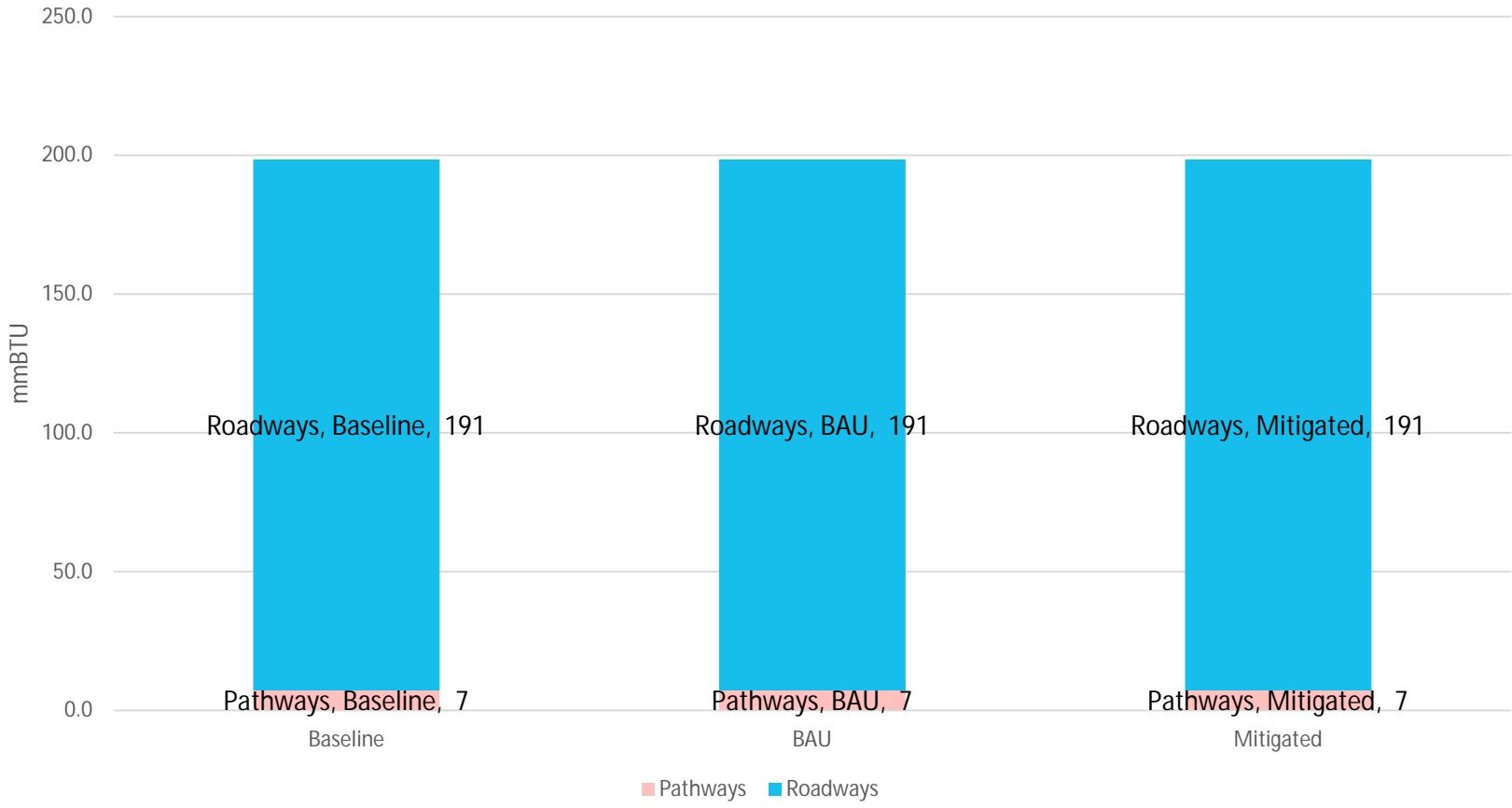
Total 30 Year Energy Use (mmBTU) by Phase



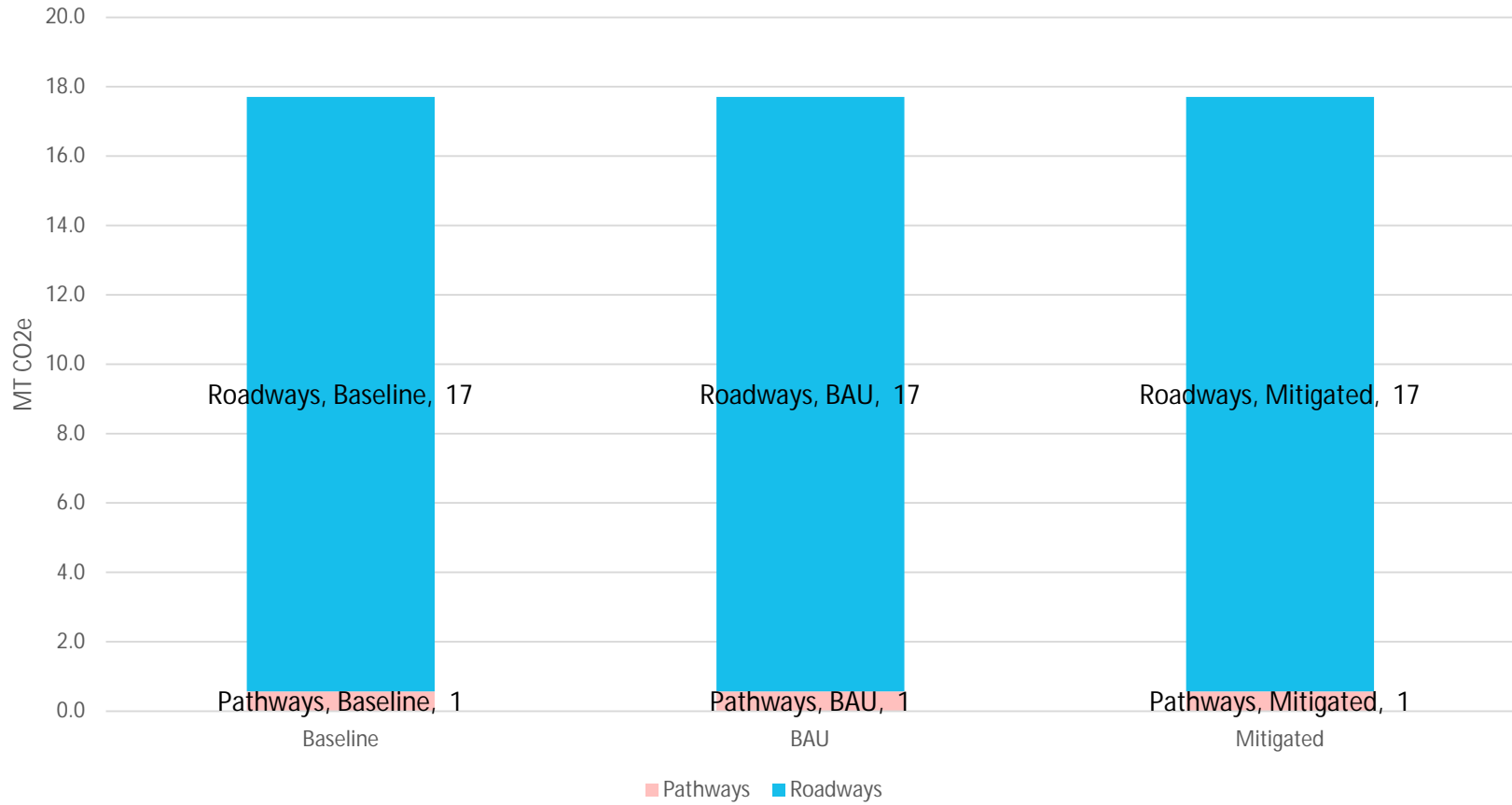
### Total 30 Year Greenhouse Gas Emissions (MT CO<sub>2</sub>e) by Phase



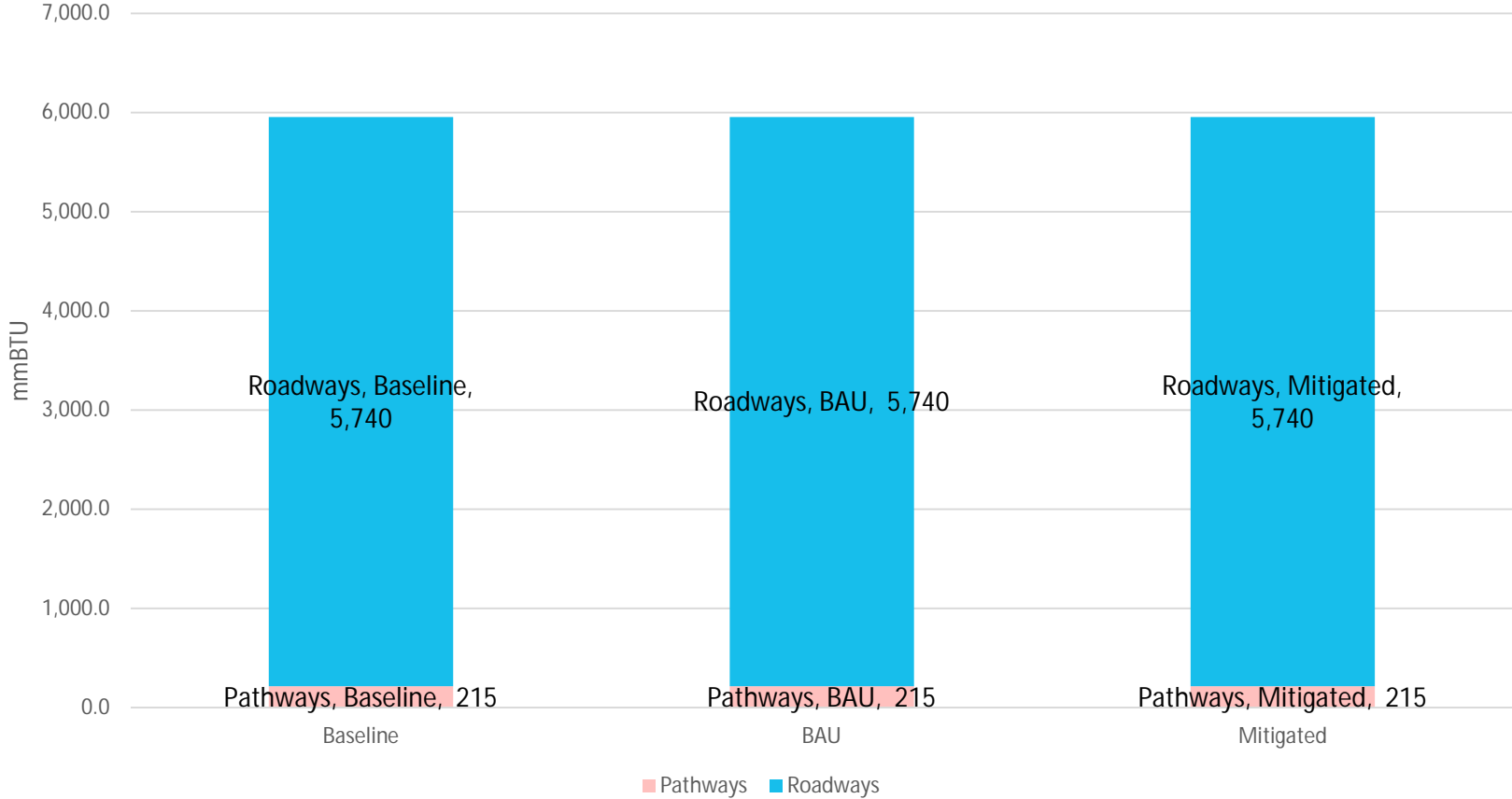
### Annualized Energy Use (mmBTU) By Infrastructure Type



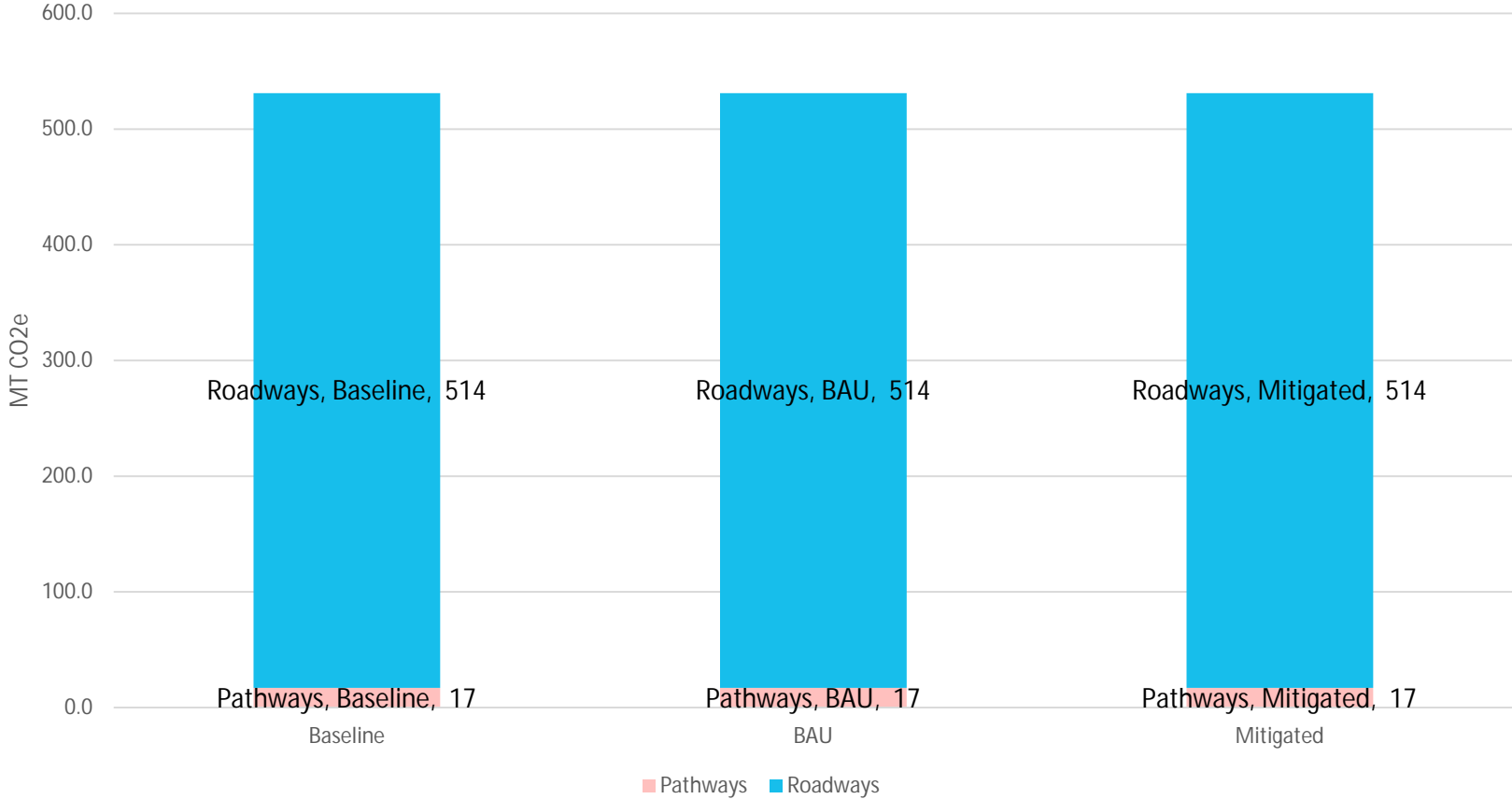
# Annualized Greenhouse Gas Emissions (MT CO2e) By Infrastructure Type



Total 30 Year Energy Use (mmBTU) By Infrastructure Type



Total 30 Year Greenhouse Gas Emissions (MT CO2e) By Infastructure Type



### Alpine Road Corridor Improvement Project - Alternative 2

The following charts and tables are for Alternative 2 of the Alpine Road Corridor Improvement Project which proposes roundabouts in existing intersections. The following information is to supplement the Climate Change Risk and Adaption Report.

	Annualized Energy Use		
	mmBTU	mmBTU	mmBTU
	Baseline	BAU	Mitigated
Materials	82	82	82
Transportation	13	13	13
Construction	104	104	104
O&M	189	189	189
Total	388	388	388

	Total Energy Use		
	mmBTU	mmBTU	mmBTU
	Baseline	BAU	Mitigated
Materials	2,463	2,463	2,463
Transportation	390	390	390
Construction	3,131	3,131	3,131
O&M	5,656	5,656	5,656
Total	11,640	11,640	11,640

Cumulative Greenhouse Gas Emissions			
	MT CO2e	MT CO2e	MT CO2e
	Baseline	BAU	Mitigated
Materials	237	237	237
Transportation	33	33	33
Construction	262	262	262
O&M	505	505	505
Total	1,037	1,037	1,037

	Annualized Energy Use		
	mmBTU	mmBTU	mmBTU
	Baseline	BAU	Mitigated
Aggregate	19	19	19
Bitumen (Asphalt Binder)	25	25	25
Cement	17	17	17
Steel	21	21	21
Water	0	0	0
Transportation Fuel	13	13	13
Construction Fuel	104	104	104
O&M fuel (DGEs)	45	45	45
O&M Roadway Rehabilitation	143	143	143
Total	388	388	388

	Annualized Greenhouse Gas Emissions		
	MT CO2e	MT CO2e	MT CO2e
	Baseline	BAU	Mitigated
Aggregate	1	1	1
Bitumen (Asphalt Binder)	2	2	2
Cement	3	3	3
Steel	2	2	2
Water	0	0	0
Transportation Fuel	1	1	1
Construction Fuel	9	9	9
O&M fuel (DGEs)	4	4	4
O&M Roadway Rehabilitation	13	13	13
Total	35	35	35

	Total Energy Use		
	mmBTU	mmBTU	mmBTU
	Baseline	BAU	Mitigated
Aggregate	565	565	565
Bitumen (Asphalt Binder)	751	751	751
Cement	521	521	521
Steel	625	625	625
Water	0	0	0
Transportation Fuel	390	390	390
Construction Fuel	3,131	3,131	3,131
O&M fuel (DGEs)	1,354	1,354	1,354
O&M Roadway Rehabilitation	4,303	4,303	4,303
Total	11,640	11,640	11,640

	Cumulative Greenhouse Gas Emissions		
	MT CO2e	MT CO2e	MT CO2e
	Baseline	BAU	Mitigated
Aggregate	31	31	31
Bitumen (Asphalt Binder)	58	58	58
Cement	97	97	97
Steel	51	51	51
Water	0	0	0
Transportation Fuel	33	33	33
Construction Fuel	262	262	262
O&M fuel (DGEs)	110	110	110
O&M Roadway Rehabilitation	395	395	395
Total	1,037	1,037	1,037

[Redacted]

Annualized Energy Use Reduction		
mmBTU	mmBTU	mmBTU
Materials	Transportation	Construction

Total

-

-

-

ns Relative to BAU

mmBTU	mmBTU
O&M	TOTAL

-

-

[Redacted]

Annualized Greenhouse Gas Emission R		
MT CO2e	MT CO2e	MT CO2e
Materials	Transportation	Construction

Total

-

-

-

Reductions Relative to BAU

MT CO2e	MT CO2e
O&M	TOTAL

-

-

Total

Total Energy Use Reductions		
mmBTU	mmBTU	mmBTU
Materials	Transportation	Construction

-	-	-
---	---	---

Relative to BAU

mmBTU	mmBTU
O&M	TOTAL

-

-

Total

Cumulative Greenhouse Gas Emission R		
MT CO2e	MT CO2e	MT CO2e
Materials	Transportation	Construction

- - -

Reductions Relative to BAU

MT CO2e	MT CO2e
O&M	TOTAL

-

-

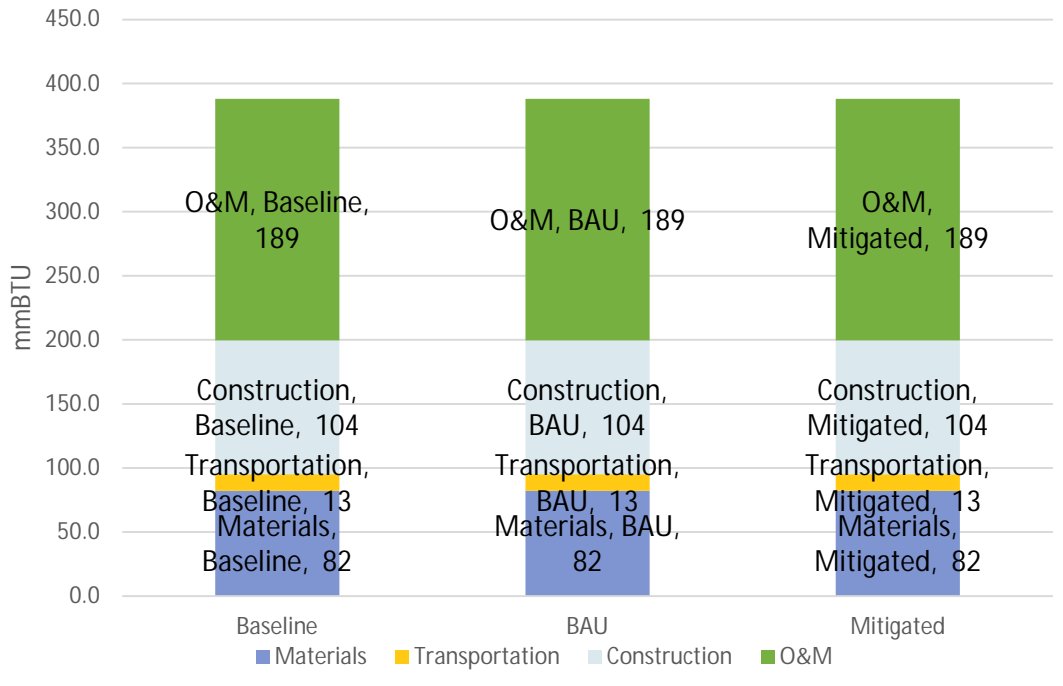
	Annualized Energy Use		
	mmBTU	mmBTU	mmBTU
	Baseline	BAU	Mitigated
Pathways	13	13	13
Roadways	375	375	375
Total	-	-	-

	Annualized Greenhouse Gas Emissions		
	MT CO2e	MT CO2e	MT CO2e
	Baseline	BAU	Mitigated
Pathways	1	1	1
Roadways	34	34	34
Total	-	-	-

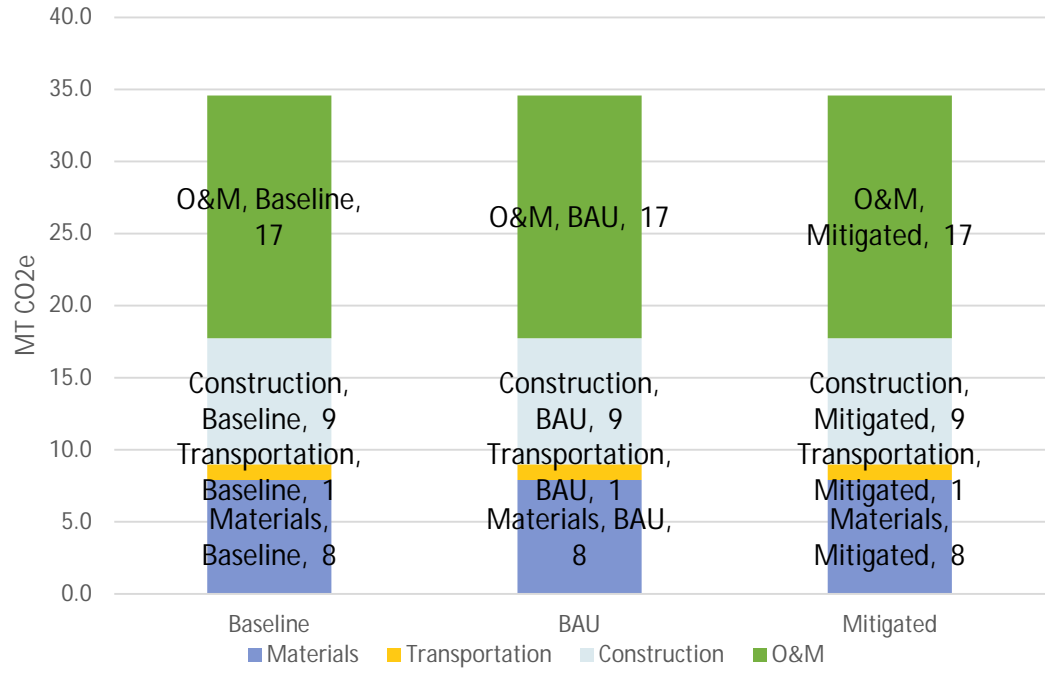
	Total Energy Use		
	mmBTU	mmBTU	mmBTU
	Baseline	BAU	Mitigated
Pathways	399	399	399
Roadways	11,241	11,241	11,241
Total	-	-	-

	Cumulative Greenhouse Gas Emissions		
	MT CO2e	MT CO2e	MT CO2e
	Baseline	BAU	Mitigated
Pathways	31	31	31
Roadways	1,006	1,006	1,006
Total	-	-	-

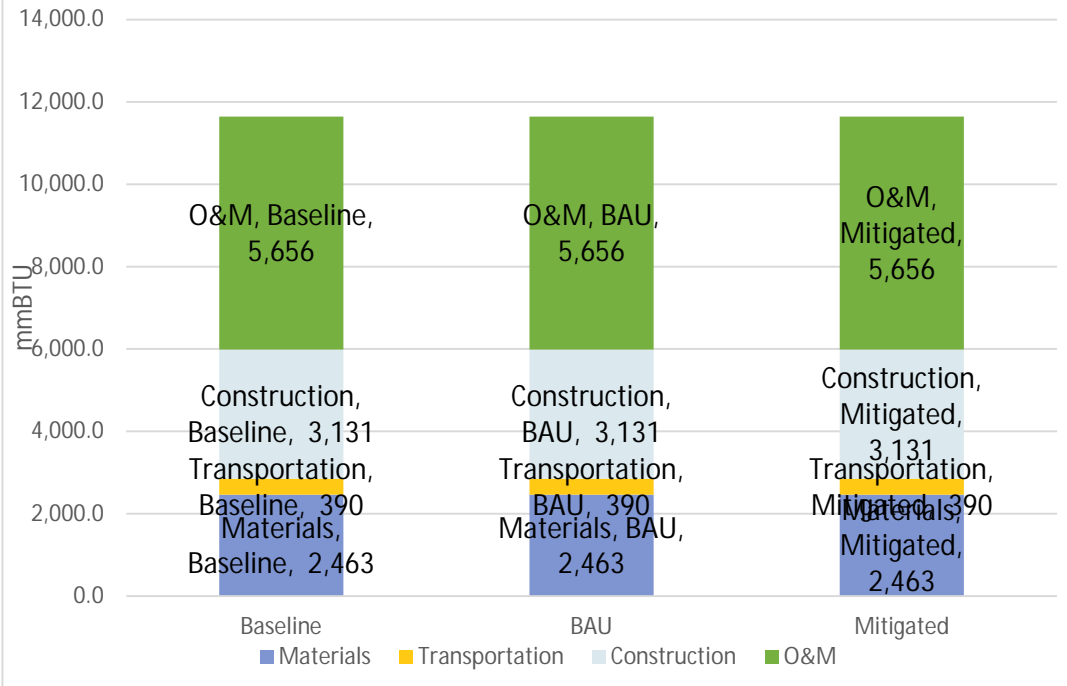
### Annualized Energy Use (mmBTU) by Phase



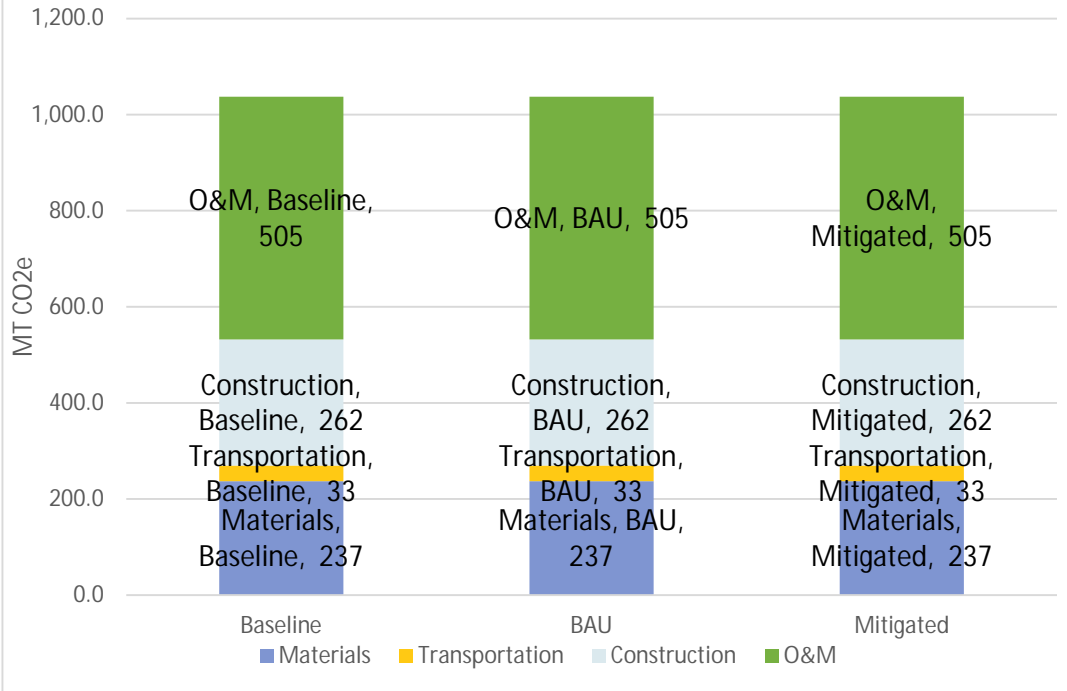
### Annualized Greenhouse Gas Emissions (MT CO2e) by Phase



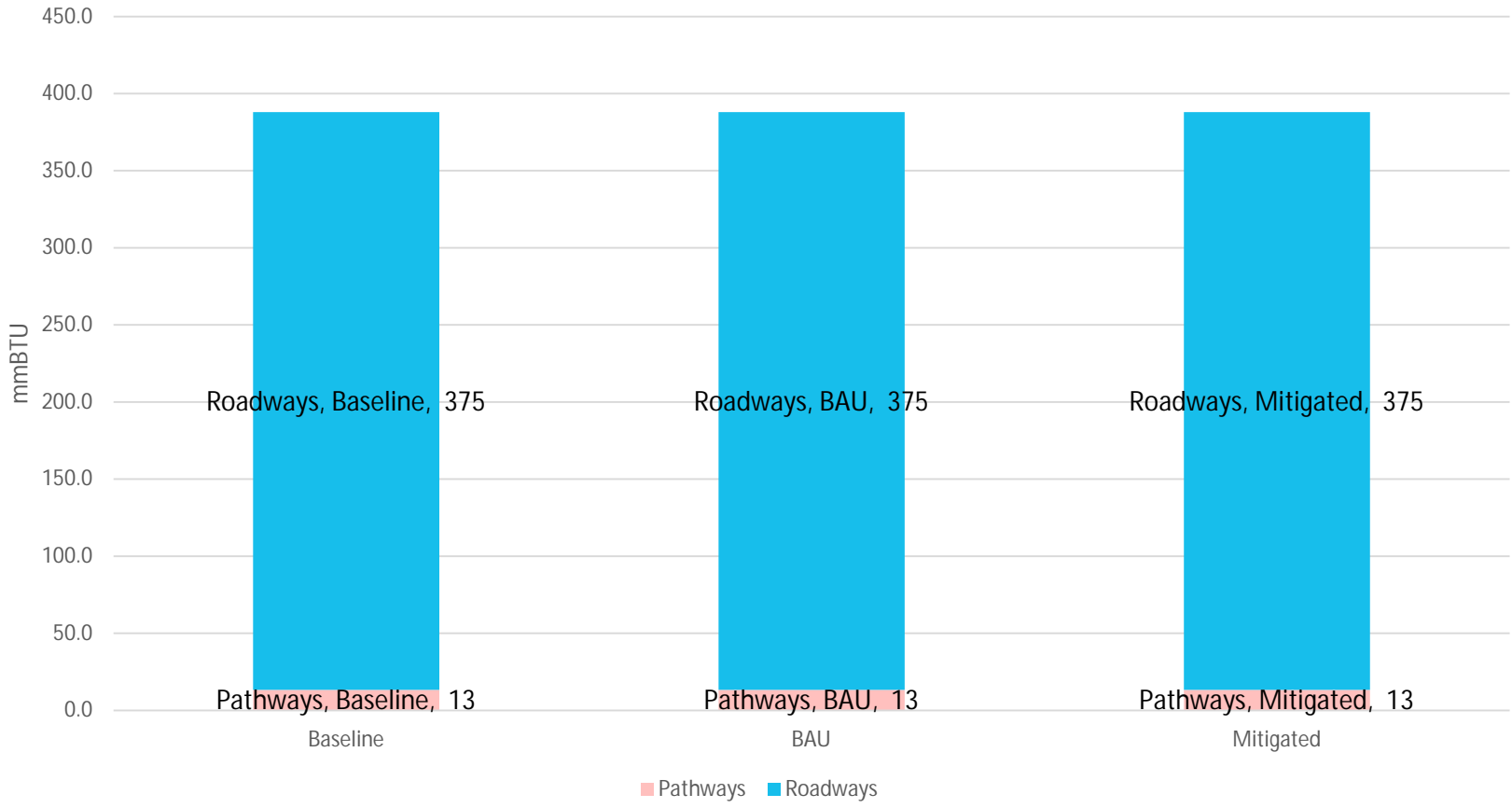
Total 30 Year Energy Use (mmBTU) by Phase



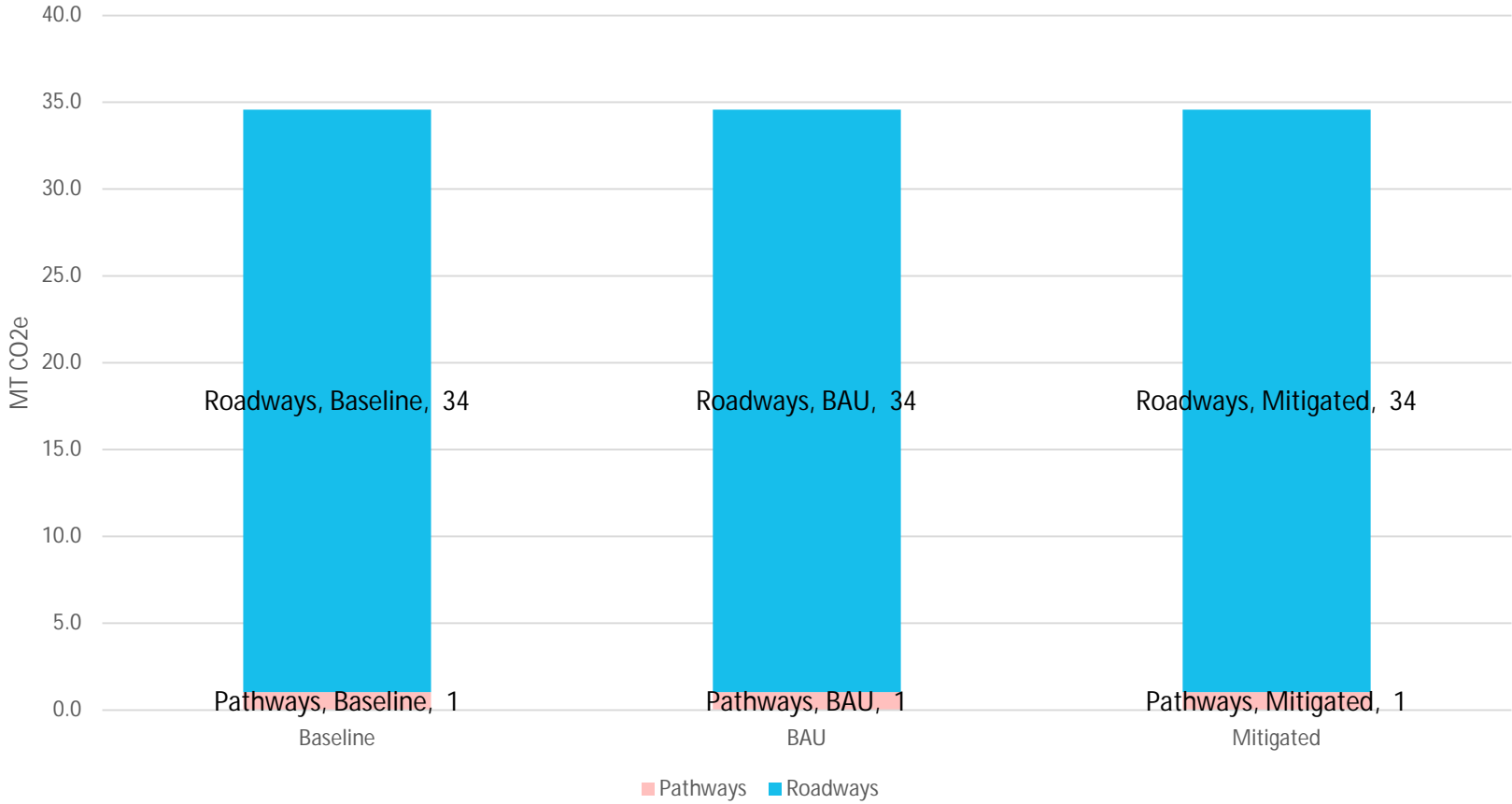
### Total 30 Year Greenhouse Gas Emissions (MT CO<sub>2</sub>e) by Phase



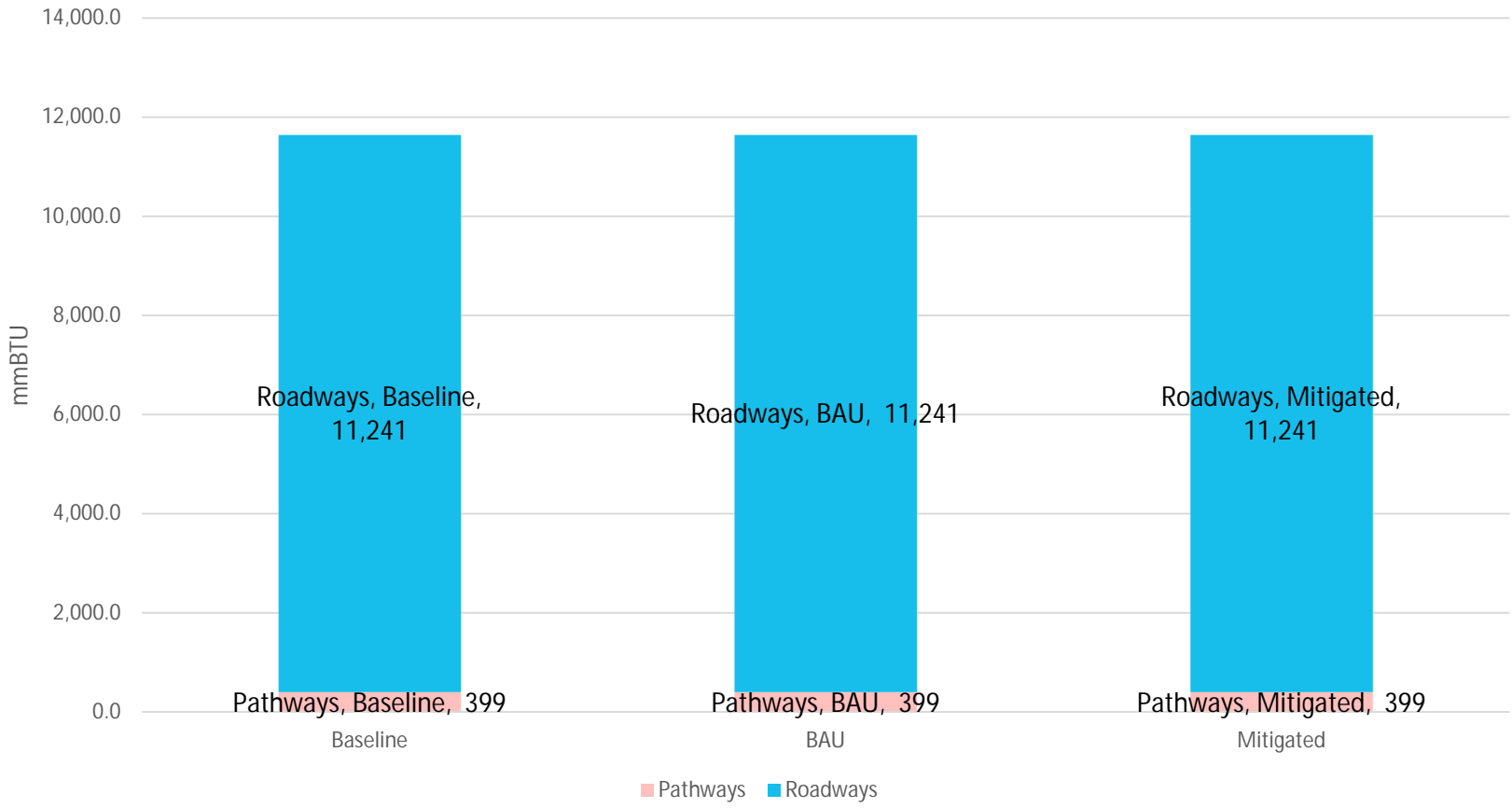
Annualized Energy Use (mmBTU) By Infrastructure Type



# Annualized Greenhouse Gas Emissions (MT CO2e) By Infrastructure Type



### Total 30 Year Energy Use (mmBTU) By Infrastructure Type



Total 30 Year Greenhouse Gas Emissions (MT CO2e) By Infastructure Type

