PLACER 49 SAFETY BARRIER PROJECT

PLACER COUNTY, CALIFORNIA
DISTRICT 3 – PLA – 49 (PM R8.7/R10.6)
03-4H600/0319000004

Initial Study with Mitigated Negative Declaration / Environmental Assessment with Finding of No Significant Impact

Prepared by the
State of California, Department of Transportation

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 USC 327 and the Memorandum of Understanding dated December 23, 2016, and executed by FHWA and Caltrans.

July 2021

General Information about This Document

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), has prepared this Initial Study with Mitigated Negative Declaration/Environmental Assessment for the proposed project located in Placer County, California. The Department is the lead agency under the National Environmental Policy Act (NEPA). Caltrans is the lead agency under the California Environmental Quality Act (CEQA). The document tells you why the project is being proposed, what alternatives have been considered for the project, how the existing environment could be affected by the project, the potential impacts of each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures. The Initial Study/Draft Environmental Assessment circulated to the public for 30 days between May 19, 2021 and June 17, 2021. Comments received during this period are included in Appendix H. Elsewhere throughout this document, a vertical line in the margin indicates a change made since the draft document circulation. Minor editorial changes and clarifications have not been so indicated. Additional copies of this document and the related technical studies are available for review at Caltrans District 3, 703 B Street, Marysville, CA 95901. This document may be downloaded at the following website: https://dot.ca.gov/caltrans-near-me/district-3/d3-programs/d3-environmental/d3-environmental-docs

Alternative Formats:

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SCH# 2021050409
03-PLA-49-PM R8.7/R10.6
EA: 03-4H600
03-1900-0004

Placer 49 Safety Improvement Project on
State Route 49, in Placer County (Postmile R8.7 to Postmile R10.6)
north of Auburn city limits

INITIAL STUDY with Mitigated Negative Declaration/Environmental Assessment with Finding of No Significant Impact

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C)

THE STATE OF CALIFORNIA
Department of Transportation

08/06/2021
Date

Mike Bartlett
Mike Bartlett, Office Chief
North Region Environmental-District 3
California Department of Transportation
CEQA/NEPA Lead Agency

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CALIFORNIA DEPARTMENT OF TRANSPORTATION
FINDING OF NO SIGNIFICANT IMPACT (FONSI)

FOR

Placer 49 Safety Barrier Project

The California Department of Transportation (Caltrans) has determined that Alternative 1 will have no significant impact on the human environment. This FONSI is based on the attached Environmental Assessment (EA) which has been independently evaluated by Caltrans and determined to adequately and accurately discuss the need environmental issues and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. Caltrans takes full responsibility for the accuracy, scope, and content of the attached EA (and other documents as appropriate).

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 USC 327 and the Memorandum of Understanding dated December 23, 2016 and executed by FHWA and Caltrans.

Mike Bartlett

Mike Bartlett, Office Chief
North Region Environmental-District 3
California Department of Transportation

08/06/2021

Date

SCH: 2021050409

MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes a safety project on California State Route 49 (SR 49) in Placer County between the city of Auburn and the city of Grass Valley. This project proposes to construct a concrete median barrier on SR 49, between Lorenson Road and Lone Star Road to reduce the number and severity of cross median collisions within this segment. In addition, construction of traffic features at Lorensen Road and Lone Star Road intersections are proposed to accommodate U-turn movements for out-of-direction travel resulting from the construction of the concrete median barrier.

Determination

This Mitigated Negative Declaration (MND) is included to give notice to interested agencies and the public that it is the Department's intent to adopt an MND for this project. This does not mean that the Department's decision regarding the project is final. This MND is subject to change based on comments received by interested agencies and the public.

Caltrans has prepared an Initial Study for this project and, following public review, has determined from this study that the proposed project would not have a significant effect on the environment for the following reasons:

The proposed project would have no impact on **agriculture and forest resources**, **energy**, **geology and soils**, **land use and planning**, **mineral resources**, **public services, recreation**, and **tribal cultural resources**.

In addition, the proposed project would have less than significant impact to **aesthetics**, **air quality**, **cultural resources**, **greenhouse gas emissions**, **hazards and hazardous waste materials**, **hydrology and water quality**, **population and housing**, **noise**, **transportation**, **utilities and service systems**, and **wildfires**.

With the following avoidance, minimization, and mitigation measures incorporated, the proposed project would have less than significant effects to **biological resources**:

BIO-2: Natural Resource Protection Plan

BIO-4: Install Fencing to Protect Sensitive Biological Resources

BIO-5: Compensatory for Impacts on Wetlands

Mike Bartlett

Mike Bartlett, Office Chief
North Region Environmental-District 3
California Department of Transportation

08/06/2021

Date

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Chapter 1 – Proposed Project

1.1 Introduction

NEPA Assignment

California participated in the "Surface Transportation Project Delivery Pilot Program" (Pilot Program), pursuant to 23 USC 327, for more than five years beginning July 1, 2007, and ending September 30, 2012. MAP-21 (P.L. 112-141), signed by President Obama on July 6, 2012, amended 23 USC 327 to establish a permanent Surface Transportation Project Delivery Program. As a result, the Department entered into a Memorandum of Understanding pursuant to 23 USC 327 (NEPA Assignment MOU) with FHWA. The NEPA Assignment MOU became effective October 1, 2012, and was renewed on December 23, 2016, for a term of five years. In summary, the Department continues to assume FHWA responsibilities under NEPA and other federal environmental laws in the same manner as was assigned under the Pilot Program, with minor changes. With NEPA Assignment, FHWA assigned and the Department assumed all of the United States Department of Transportation (USDOT) Secretary's responsibilities under NEPA. This assignment includes projects on the State Highway System and Local Assistance Projects off of the State Highway System within the State of California, except for certain categorical exclusions that FHWA assigned to the Department under the 23 USC 326 CE Assignment MOU, projects excluded by definition, and specific project exclusions.

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), is the lead agency under the National Environmental Policy Act (NEPA). Caltrans is the lead agency under the California Environmental Quality Act (CEQA).

Caltrans proposes to improve safety and operations through the Federally mandated and State supported Highway Safety Improvement Program (HSIP), as a 201.010 Safety Improvement Program project, on a segment of State Route (SR) 49 in Placer County, about 4 miles north of the city of Auburn. The total length of the project is about 1.9 miles. Figures 1 and 2 show the project location and vicinity maps.

SR 49 travels north-south within Caltrans District 3 for approximately 146 miles. Within the District, the route begins at the Amador/El Dorado County line traveling north in El Dorado County, traversing Placer, Nevada, Yuba and Sierra counties, and ending at the Sierra/Plumas County line north of the city of Loyalton. Route breaks occur in Nevada County at the junction of SR 20 and in Sierra County at the junction of SR 89. SR 49 provides access to towns and cities such as El Dorado, Diamond Springs, Placerville, Coloma, Auburn, Grass Valley, Nevada City, Downieville, Loyalton, and many communities in the Gold Country area. SR 49 intersects US 50 near Placerville, SR 193 in Placerville and Cool, I-80 in Auburn, SR 20 in Grass Valley and Nevada City, and joins with SR 89 between Sierraville and Sattley.

SR 49 provides lifeline accessibility for interregional movement of people, goods, agriculture, and recreation. It is also considered an alternative route during closures on I-80. Traffic on SR 49 is a mixture of local and visitor vehicles traveling to residential sites, commercial establishments, and recreational facilities along its length. Traffic volumes on SR 49 vary considerably from the urban community of Auburn to the small, rural community of Downieville.

This segment of SR-49 is a four-lane conventional highway with two lanes in each direction and a two-way, left turn lane in the median to allow vehicles to turn in and out of local roads, driveways, and unsignalized intersections. The posted regulatory speed limit on this segment of SR 49 is 65 mph. The truck designation is Terminal Access Surface Transportation Assistance Act (STAA).

The project was initiated per the Highway Safety Improvement Program (HSIP) Multilane Cross Median Collision Monitoring Program. This segment of SR 49 met HSIP requirements for funding under the State Highway Operation and Protection Program (SHOPP) 20.XX.201.010, Safety Program for installation of a median barrier.

1.2 Purpose and Need

1.2.1 Need

This segment of SR 49 has a history of cross median collisions identified through the Multilane Cross Median Collision Monitoring Program. Per the March 2019 Traffic Safety Systems Guidance, this segment meets the requirement for installation of a concrete median barrier.

1.2.2 Purpose

The purpose of this project is to improve safety on this segment of SR 49 by reducing the number and severity of cross median collisions through installation of a concrete median barrier on SR 49 from Lorenson Road/Florence Lane to Lone Star Road. Intersection traffic control measures will be constructed at Lorenson Road/Florence Lane and Lone Star Road intersections to accommodate safe turning movements including U-turn movements for out-of-direction travel.

1.2.3 Problem, Deficiencies, Justification

This segment of SR 49 has a history of cross median collisions identified through the Multilane Cross Median Collision Monitoring Program. Based on a Selective Collision Rate Calculation performed by District 3 Office of Traffic Safety for this segment from the three-year period from January 1, 2015, to December 31, 2017. During this three-year period, of the 34 reported collisions, 1 head-on collision resulted in a fatality, 12 resulted in injury, and 21 resulted in property damage. Out of these 34 collisions, 2 were cross-centerline and head-on, 6 were sideswipes, 5 were rear ends, 9 were broadside collisions, 5 were object collisions, 4 were overturned vehicles, and 3 were not reported.

This project was identified through the Federally mandated, State supported Highway Safety Improvement Program (HSIP) as a 201.010, Safety Improvement Program project. This is part of the Multilane Cross Median Monitoring Program to place concrete median barrier on SR 49 in Placer County, due to a series of cross median collisions that resulted in both fatal and serious injuries. The concrete median barrier will be installed on a segment between Lorenson Road/Florence Lane and Lone Star Road.

The concrete median barrier placed within the project limits will prevent left turns from or to SR 49. Because this will allow only right turns from driveways and side streets, out of direction travel will have to be accommodated. Intersection traffic control measures will be provided to facilitate u-turns and left turns at Lorenson Road/Florence Lane and Lone Star Road.

Otherwise, the nearest opportunities for u-turns and left turns is at Wolf-Combie Road, 3.3 miles away from Lone Star Road for northbound traffic, and at Willow Creek Road, 2.8 miles away from Lorenson/Florence Lane for southbound.

Safety is paramount in Caltrans culture. Caltrans' Mission is: "Provide a safe and reliable transportation network that serves all people and respects the environment." Caltrans' primary goal is "Safety First." Both of these are supported by Caltrans' "Four Pillars of Traffic Safety:"FHWA Proven Safety Countermeasures, part of the Every Day Counts program;

- FHWA Proven Safety Countermeasures, part of the Everyday Counts program;
- Safe System approach for traffic safety, which notes that death and serious injury are unacceptable, that humans make mistakes and are vulnerable, that responsibility is shared, that safety is proactive, and that system redundancy is critical;
- Accelerate advanced technology; and
- Integrating equity by ensuring that the goals of the Strategic Highway Safety Plan (SHSP) and HSIP are incorporated into engineering processes to help traditionally underserved populations.
- The change to Safe Systems approach is a paradigm shift in roadway safety philosophy. Whereas before we wanted to prevent collisions, we now want to prevent death and serious injuries.

1.3 Independent Utility and Logical Termini

Federal Highway Administration (FHWA) regulations (23 Code of Federal Regulations [CFR] 771.111 [f]) require that the action evaluated:

1. Connect logical termini and be of sufficient length to address environmental matters on a broad scope.

2. Have independent utility or independent significance (be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made).

3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

Per FHWA guidelines on "Independent Utility and Logical Termini," This project should satisfy an identified need, such as safety, rehabilitation, economic development, or capacity improvements, and should be considered in the context of the local area socioeconomics and topography, the future travel demand, and other infrastructure improvements in the area.

Logical termini for project development are defined as (1) rational end points for a transportation improvement, and (2) rational end points for a review of the environmental impacts. The environmental impact review frequently covers a broader geographic area than the strict limits of the transportation improvements. In the past, the most common termini have been points of major traffic generation, especially intersecting roadways. This is because in most cases traffic generators determine the size and type of facility being proposed. However, there are also cases where the project improvement is not primarily related to congestion due to traffic generators, and the choice of termini based on these generators may not be appropriate.

When developing a transportation project, project sponsors should consider how the end points of the action are determined, both for the improvement itself and for the scope of the

environmental analysis. Whether the action has "logical termini" or not is also a concern. Logical termini for project development are defined as rational end points for both a transportation improvement and a review of the environmental impacts.

The need of this project is to address the history of cross median collisions along this section of the corridor. The purpose is to improve safety on this segment of SR 49 by reducing the number and severity of cross median collisions from Lorenson Road/Florence Lane to Lone Star Road. The project limits and environmental study area were based on these termini. Therefore, the project has logical termini.

The project alternatives will address the purpose and need without additional improvements; therefore, the project has independent utility.

1.4 Project Description

This section describes the proposed action and the project alternatives developed to meet the purpose and need of the project, while avoiding or minimizing environmental impacts.

This project is located on California State Route 49 (SR 49) in Placer County, from Post Miles (PM) 8.7 to PM 10.6, between the City of Auburn and the City of Grass Valley. This project proposes to construct a concrete median barrier on SR 49, between Lorenson Road/Florence Lane and Lone Star Road to reduce the number and severity of cross median collisions within this segment. In addition, construction of traffic features at Lorensen Road/Florence Lane and Lone Star Road intersections are proposed to accommodate U-turn movements for out-of-direction travel resulting from the construction of the concrete median barrier.

Figure 1. Project Vicinity Map

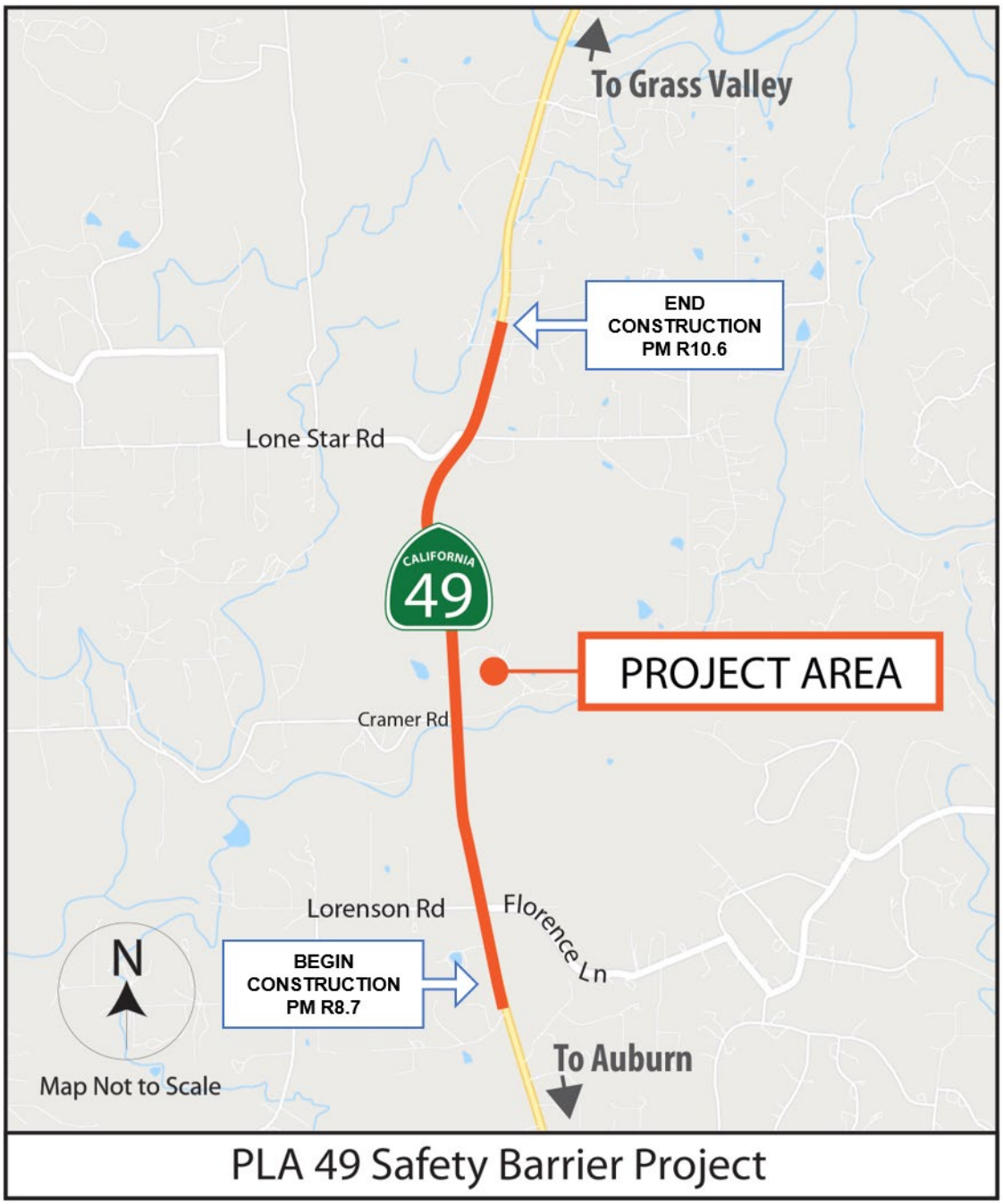
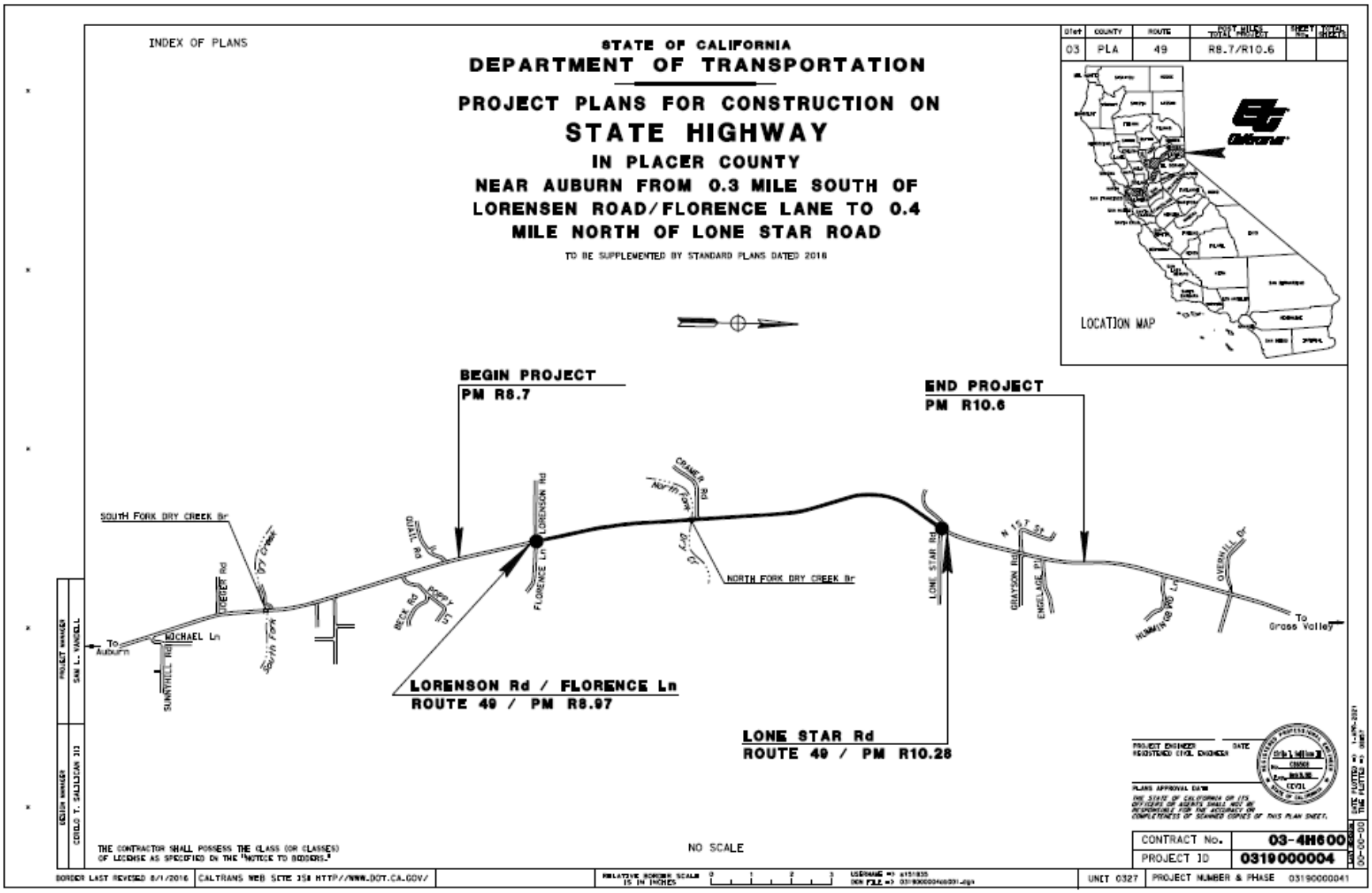


Figure 2. Project Location Map



1.5 PROJECT ALTERNATIVES

Under evaluation for this project are three build alternative—Alternative 1, Alternative 2 and Alternative 3 described in the subsections below, as well as a No-Build (or No-Action) Alternative.

Each project alternative includes the following standardized measures that are part of the project description. Standardized measures (such as Best Management Practices [BMPs]) are those measures that are generally applied to most or all projects. These standardized or pre-existing measures allow little discretion regarding their implementation and are not specific to the circumstances of a particular project. More information on each measure can be found in the applicable sections of Chapter 2.

TT-1: A Transportation Management Plan (TMP) will be prepared for the project.

CR1: Standard provisions dealing with the discovery of unanticipated cultural materials or human remains will be included in the project plans and specifications:

AQ1: The construction contractor must comply with the Department's Standard Specifications in Section 14.

After the public circulation period, all comments will be considered, and the Department will select a preferred alternative and make the final determination of the project's effect on the environment. Under the California Environmental Quality Act (CEQA), if no unmitigable significant adverse impacts are identified, the Department will prepare a Negative Declaration (ND) or Mitigated ND.

Similarly, if the Department, as assigned by the Federal Highway Administration (FHWA), determines the National Environmental Policy Act (NEPA) action does not significantly impact the environment, the Department will issue a Finding of No Significant Impact (FONSI).

The project will be designed as a conventional highway in rural, flat terrain with a minimum design speed of 65 mph.

For Alternative 1, the project capital cost, including right of way and construction, is estimated to be $25.3 million as of April 2021.

For Alternative 2 the project capital cost, including right of way and construction, is estimated to be $25.2 million as of April 2021.

For Alternative 3 the project capital cost, including right of way and construction, is estimated to be $33.3 million as of April 2021.

The proposed completion of construction for this project is in the fiscal year 2022/2024.

1.5.1 Build Alternatives

Common Design Features of the Build Alternatives

The construction approach would be the same for all alternatives. Construction of Alternative 1, Alternative 2, or Alternative 3 is currently projected to begin in September 2022 and end in August 2024. All build alternatives contain the following design features:

- Median Barrier (MB) – the primary purpose of this project is to install concrete median barrier for the purpose of reducing fatal and serious injury cross median collisions.

  To accommodate local first responders, an emergency passageway (concrete median barrier opening) approximately 300 feet to the north of Cramer Road intersection will be constructed.
- Between North Fork Dry Creek Bridge and Lorenson Road/Florence Lane, wildlife fencing will be installed, or existing fencing will be modified to accommodate safe passage for wildlife to utilize the existing cattle guard just south of North Fork Dry Creek. This has the added safety benefit of fewer animal hits on the highway.
- Safety Edge – is applicable as required by the appropriate Caltrans Standard Plans.
- Corridor Access Management – this countermeasure refers to control of entry and exit points from the highway. The concrete median barrier meets this requirement since it prevents both left turns from the mainline highway and from the secondary roads/driveways within the project.
- Caltrans will coordinate utility relocation work with the affected utility companies to notify them of conflicts and necessary relocation of their utilities prior to construction. The coordination will provide ample time for affected utility companies to notify customers of potential service disruptions. A coordinated relocation plan will be developed with the utility companies to relocate the underground utilities line.
- Enhanced Delineation and Friction for Curves – this project includes the following:
    - Pavement markings –The Department uses a standard 6″ wide Enhanced Wet Night Visibility (EWNV) thermoplastic striping. EWNV striping adds both a high level of initial and long-term luminescence and a multi-faceted bead to the standard thermoplastic. This multifaceted bead reflects light on wet pavement back to the driver which, when coupled with the wider stripe width, further enhances the visibility of the striping both at night and when the pavement is wet. These assist all drivers.
    - Post mounted delineation – all curves through the project are evaluated for compliance with California Manual of Uniform Traffic Control Devices (CA MUTCD) Section 2C.09 for additions of chevrons for curve delineation.
    - Larger signs and signs with enhanced retro reflectivity—all speed limit signs will have the size increased to the maximum allowed by the CA MUTCD for a conventional highway. Caltrans already uses Type XI retroreflective sheeting as a standard and this is currently the highest standard retroreflective sheeting available in the industry.
    - Dynamic advance curve warning signs and sequential curve signs—all curves through the project are evaluated for compliance with California Manual of Uniform Traffic Control Devices (CA MUTCD) Section 2C.09 for additions of sequential chevrons for curve delineation.

- Curve correction and new Gap Graded Rubberized HMA pavement—the Department will place a Gap Graded Rubberized HMA pavement as the final riding surface. This riding surface will have a higher frictional coefficient than the existing pavement.

Unique Features of Build Alternatives

Alternative 1: Barriers and Roundabouts

Alternative 1 proposes to construct a 1.3-mile-long concrete median barrier on SR 49 between Lone Star Road and Lorenson Road/Florence Lane. Approximately 80 linear feet of concrete median will be installed at the North Fork Dry Creek Bridge (Br. No. 19-0021).

Multilane roundabouts are proposed to be constructed at the intersection of SR 49/Lone Star Road and SR 49/Lorenson Road/Florence Lane. Both intersections will be designed to allow for vehicles up to the size of a CA Legal truck to perform a U-turn movement. Both roundabouts will have an Inscribed Circle Diameter (ICD) of 180 feet, 2 lanes in the NB and SB directions, and 1 lane in the EB and WB directions.To help with speed reduction on SR 49, a combination of successive curves (chicanes) on the NB and SB approaches to the roundabouts are proposed. The roundabouts will also have a 15-foot-wide truck apron, two 19-foot-wide travel lanes in the NB/SB direction, and a single 24-foot-wide lane in the EB/WB directions.

This stretch of roadway will have a Class II bike lane. On the north and south sides of the roundabouts there will be a bike ramp to give cyclists the option of traversing through the roundabout or getting off the road onto a shared-use path. The shared-use path will connect with the crosswalks on the east and west sides of the roundabouts.

Both roundabouts will utilize commonly used roundabout traffic calming aspects: geometric design, approach curves (chicanes), raised curbs and splitter islands, signage, and landscape features.

Lighting will be upgraded to standard at both roundabouts to increase safety. Advanced warning will be added at the intersection approaches to include flashing beacons with signage. In the NB direction, approximately 1,100 feet south of Lone Star Road, the slope would be cut back to improve sight distance to the Lone Star Road intersection. Other work will include pavement rehabilitation of SR 49 between Lorenson Road/Florence Lane and Lone Star Road. This will include grinding of the existing asphalt surface and repaving with rubberized hot mix asphalt (RHMA).

Alternative 2: Barriers and Signaled Intersections

Alternative 2 proposes to construct a 1.3-mile-long concrete median barrier on SR 49 between Lone Star Road and Lorenson Road/Florence Lane. Approximately 80 linear feet of concrete median will be installed at the North Fork Dry Creek Bridge (Br. No. 19-0021). Signalized intersections are proposed at the intersections of SR 49/Lone Star Road and SR 49/Lorenson Road/Florence Lane.

Both intersections will be widened to allow for vehicles up to the size of a California Legal truck to perform a U-turn movement. An acceleration lane will be added to the NB side of the SR 49/Lorenson Road/Florence Lane intersection and to the SB side of the SR 49/Lone Star Road intersection to allow the U-turning vehicles to accelerate to the traveling speed. Left turn lanes and right turn pockets will also be included.

Lighting will be upgraded to standard at both intersections to increase lighting and visibility. Advanced warning will be added at the intersection approaches to include flashing beacons with signage. In the NB direction, approximately 1,100 feet south of Lone Star Road, the slope would

be cut back to improve sight distance to the Lone Star Road intersection.This stretch of roadway will have a Class II bike lane. Crosswalk signals will allow pedestrian and bike access through the intersections. Other work will include pavement rehabilitation of SR 49 between Lorenson Road/Florence Lane and Lone Star Road. This will include grinding of the existing asphalt surface and repaving with rubberized hot mix asphalt.

Alternative 3: Barriers and Restricted Crossing U-Turn (RCUT)

Alternative 3 proposes to construct Restricted Crossing U-Turn (RCUT) intersections at Lorenson Road/Florence Lane and Lone Star Road. This intersection design prohibits left turn and through movements from the minor road. These movements will be accommodated by turnarounds located north and south of the main intersection. The proposed turnaround provides a turn lane and widened receiving area for U-turn movements. The intersection control will remain the same as existing conditions with stop signs on the side roads.

1.5.2 NO-BUILD (NO-ACTION) ALTERNATIVE

The No-Build Alternative will not address the purpose and need of this project–to improve the safety of this segment of roadway. If this project is not completed, the severity of cross centerline collisions occurring on this section of roadway will not be reduced.

1.5.3 IDENTIFICATION OF A PREFERED ALTERNATIVE

After the public comment period, all comments were considered, and Alternative 1 was confirmed by the PDT as the preferred alternative. The preferred alternative is documented in the Project Report and will be approved by Caltrans.

Alternative 1 was identified as the preferred alternative because it best addresses the project purpose and need, has fewer community impacts, and a lower cost than Alternative 2 and 3.

1.5.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER DISCUSSION PRIOR TO THE 'DRAFT" INTIAL STUDY/ENVIRONMENTAL ASSESSMENT (IS/EA)

Alternative 4 – Barriers Only

Construct concrete median barrier on State Route 49 between Lorenson and Lone Star Roads. This Alternative does not address the out-of-direction travel for vehicles now unable to directly cross SR 49 from their cross street or driveway. These vehicles would have to proceed to the next intersection and then wait for a gap in traffic sufficient to make their U-turn movement. This could be problematic for either vehicles towing trailers or even 30-foot kingpin to axle trucks. The need for vehicles to make U-turns across multiple lanes of high-speed traffic could lead to additional collisions due to the turning movements and speed differentials created from them. This is a primary reason for rejecting this alternative.

1.6 PERMITS AND APPROVALS NEEDED

Agency	PLAC	Status
U.S. Army Corps of Engineers	Clean Water Act Section 404: Permit for Placement of Fill Material into Waters of the United States	Permit application will be submitted after environmental document approval
Central Valley Regional Water Quality Control Board	Clean Water Act Section 401: Water Quality Certification	Permit application will be submitted after environmental document approval
California Department of Fish and Wildlife	California Fish and Game Code Section 1602: Streambed Alteration Agreement	Permit application will be submitted after environmental document approval
State Historic Preservation Office	Concurrence on Caltrans Findings of Effects	SHPO has provided written concurrence on Caltrans Findings of No Adverse Effect with Standard Conditions

Chapter 2 – Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

As part of the scoping and environmental analysis carried out for the project, the following environmental issues were considered; however, no adverse impacts were identified. As a result, there is no further discussion about these issues in this document.

Coastal Zone
There will be no effects to coastal resources because the project is not located within the Coastal Zone.

Wild and Scenic Rivers
There will be no effects to wild and scenic rivers because the project is not located near a designated wild and scenic river.

Parks and Recreational Facilities
SR 49 is a primary route that is used to access recreational facilities. However, since there are no recreation facilities located within the project limits, the proposed project will have no effect to any recreational facilities.

Farmlands
The project will not impact any Prime Farmland or Farmland of Statewide Importance. However, there will be some minor impacts to lands which are under the Williamson Act contract.

Timberlands
The project is not located within any land use designated as Timberland Production Zones (TPZs); therefore, there would be no effects to timberland resources.

Environmental Justice
No minority or low-income populations that would be adversely affected by the proposed project have been identified. Demographic data for the study area indicates that the proportion of the population comprising minority populations is smaller than for Placer County as a whole. Therefore, this project is not subject to the provisions of Executive Order 12898.

Geology, Soils, Seismic and Topography
The project is not located in any geologically active areas which may pose a risk for the construction or finished project. Standard erosion control measures will be employed during construction.

Air Quality
The project is exempt from air quality conformity because the project type, per Table 2 of 40 CFR 93.126, was identified as Safety (Highway Safety Improvement Program Implementation). However, air quality during construction is discussed in the air quality section 2.2.5.

Noise
The proposed project is not considered a Type 1 project as defined by Caltrans' Traffic Noise Analysis Protocol. Therefore, a traffic noise analysis is not required.

Section 4(f)
There are no historic sites, parks and recreational resources, wildlife or waterfowl refuges which meet the definition of a Section 4(f) resource, within the project vicinity. Therefore, this project is not subject to the provisions of Section 4(f) of the Department of Transportation Act of 1966.

2.1 Human Environment

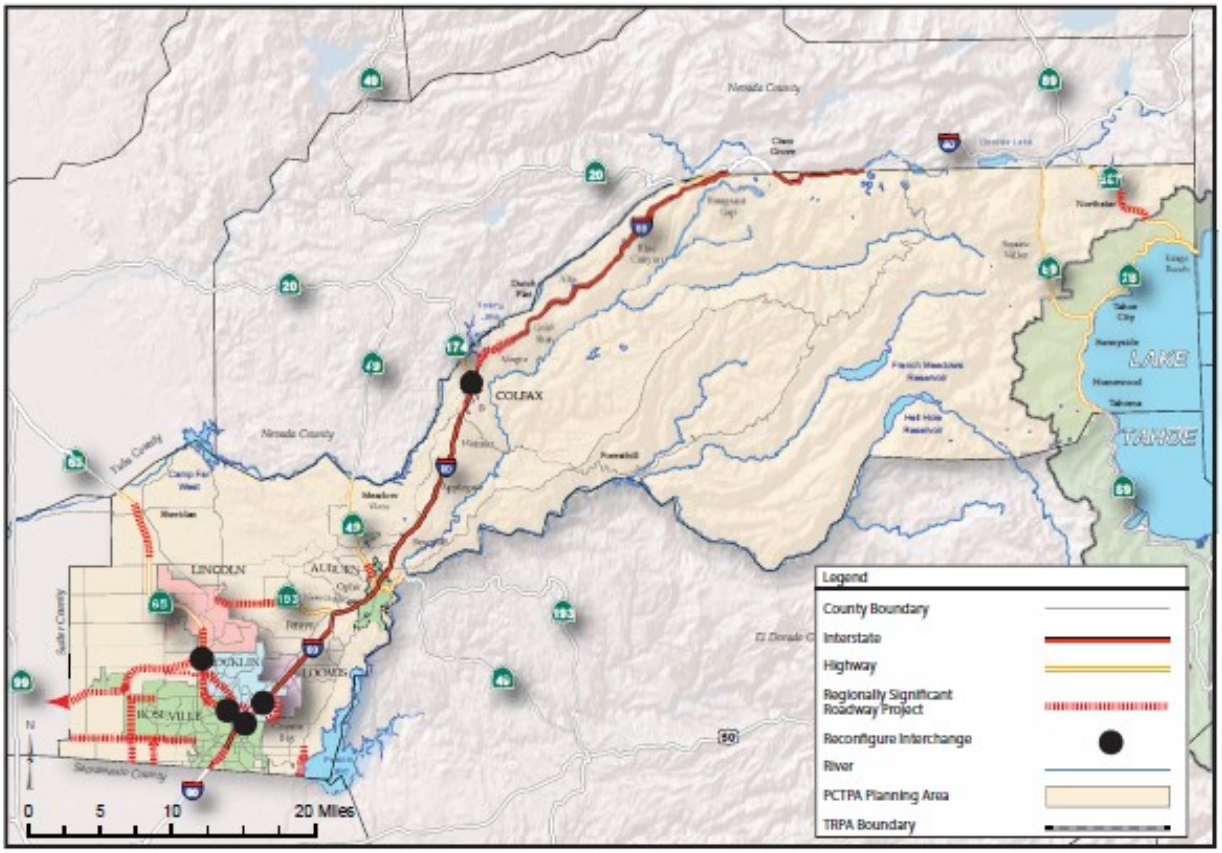
2.1.1 Existing and Future Land Use

Placer County is approximately 65 miles northeast of Sacramento and borders Nevada to the west. It stretches from the Sacramento Valley to the Sierra Nevada and consists of 1,506 square miles.

In Placer County, SR 49 is a north/south route connecting Auburn with communities in the foothills (Figure 3). At the south of the county, SR 49 is a connector roadway across the American River to El Dorado County. Towards the north end of the county, SR 49 crosses the Bear River to Nevada County.

SR 49 is a major arterial for local and through traffic; in some parts SR 49 is a city street with turn lanes and traffic signals in north and central Auburn. It also serves as an emergency detour route for I-80. The route is the lifeline for much of Placer County's freight and lumber traffic and provides access to recreational and tourist attractions.

Figure 3. Regionally Significant Roadway Projects



Source: Placer County RTP 2016

The Placer 49 Safety Barrier Project is in Placer County, north of Auburn. The project surrounding area is rural residential properties and farmland. To the south of this project there is a large shopping center, hospitals, an airport, housing developments, and recreational facilities. The area is rural and has large pockets of undeveloped land. This foothill area has a combination of tree-covered rolling hills and stream channels. The undeveloped parcels have grasslands and native and non-native vegetation (Figure 4). The land uses are zoned Rural Estates (Rural Residential) and Agriculture 10-80 acres minimum. Rural Estimates and Agriculture are identified as the following:

Agriculture (AG) (10, 20, 40, 80-160 acre minimum)

This designation identifies land for the production of food and fiber, including areas of prime agricultural soils, and other productive and potentially productive lands where commercial agricultural uses can exist without creating conflicts with other land uses, or where potential conflicts can be mitigated. Typical land uses allowed include crop production, orchards and vineyards, grazing, pasture and rangeland, hobby farms; other resource extraction activities; facilities that directly support agricultural operations, such as agricultural products processing; and necessary public utility and safety facilities. Allowable residential development in areas designated Agriculture includes one principal dwelling and one secondary dwelling per lot, caretaker/employee housing, and farm worker housing.

Rural Residential (RR)

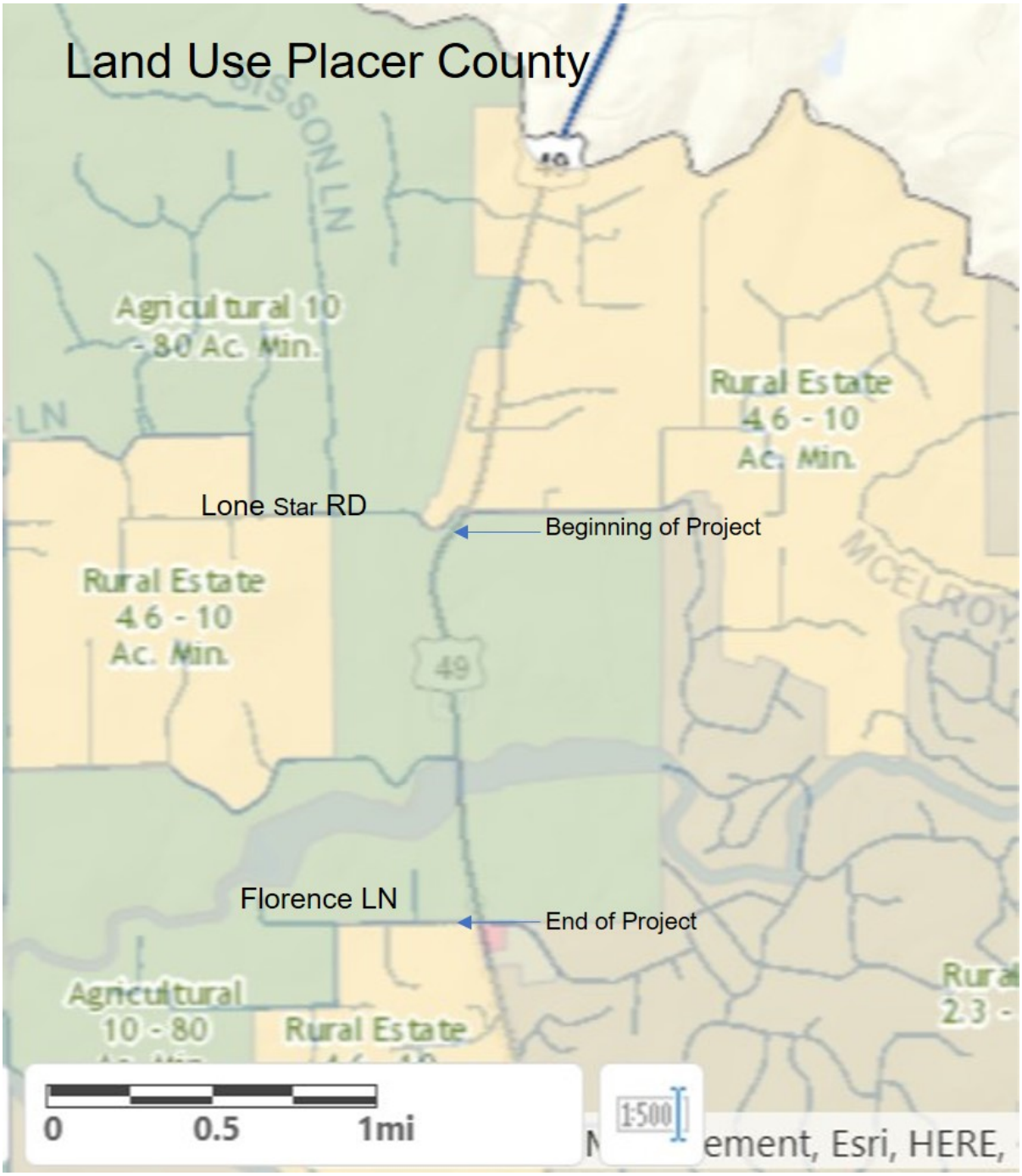
This designation is applied to areas generally located away from cities and unincorporated community centers, in hilly, mountainous, and/or forested terrain, and as a buffer zone where dispersed residential development on larger parcels would be appropriate and compatible with smaller-scale farming and ranching operations. Typical uses allowed include detached single-family dwellings and secondary dwellings; agricultural uses, such as crop production and grazing; equestrian facilities; and limited agricultural support businesses such as roadside stands, farm equipment and supplies sales; resource extraction uses; various facilities and services that support residential neighborhoods, such as churches, schools, libraries, child care and medical facilities; and parks and necessary public utility and safety facilities.

Several projects within the project vicinity are in the planning stages (Table 1)

Table 1. Planned Projects Near SR 49

Name and Address	Jurisdiction	Description	Status
03-0H210 NEV-49 Culvert Rehab (south)	Placer County	Rehabilitate Drainage System	Construction 2021
03-0H420 Count Station Repair & Install	Placer County	Repair Existing Continuous County Stations, Install New Loops at Ramp Meters, and Install New Radar County Station	In Construction 2020
03-4H020 Safety Improvement	Placer County	Install Various Safety Improvements	In Construction 2020
03-3H830 PLA-49 Sidewalk Gap Closure	Placer County	Construction Sidewalks and ADA Curb Ramps at Various Locations	Construction 2021

Figure 4. Nevada County Project Area Land



Environmental Consequences

Build Alternatives

The proposed project would improve safety for all modes of transportation. All Alternatives would require property acquisitions for intersection and shoulder improvements. Alternative 2 and 3 would require property acquisitions leading to displacement of two residential dwellings. The proposed project would not change the land use designations or zoning within the study area due to the property acquisition for intersection and shoulder improvements. The land use patterns in the study area would remain the same, and the project would increase the traffic flow and safety throughout the study area.

No Build Alternative

The No Build Alternative would not affect existing land use because the proposed project would not be constructed.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

2.1.2 CONSISTENCY WITH STATE, REGIONAL, AND LOCAL PLANS AND PROGRAMS

State Law, Government Code Section 65583(c)(1), requires that the housing element contain an inventory of land suitable for residential development, including vacant sites and sites having potential for redevelopment. The study area is in Placer County; consequently, land use planning is governed by Placer County. The Placer County *2021-2029 Housing Element* explores resources and constraints for the county and examines Placer County's housing needs, as they exist today, and projects future housing needs.

The purpose of the housing element is to identify the community's housing needs, to state the community's goals and objectives with regard to housing production, rehabilitation, and conservation to meet those needs, and to define the policies and programs that the community will implement to achieve the stated goals and objectives.

As mentioned earlier, Placer County encompasses 1,506 square miles and has a population of about 397,000 (2019). The median household income for a household of four (2020) was about $86,300 and the median home sales price in 2020 was about $569,000. There are five incorporated cities (Auburn, Colfax, Lincoln, Roseville, Rocklin) and the incorporated town of Loomis within the county. In addition to the incorporated cities and town, the county has about 21 unincorporated small communities, five in the eastern part of the county (Lake Tahoe area) and 16 in the western part of the county (Placer County Regional 2020).

According to the *Placer Housing Element 2021 – 2029*, the county has grown at a rapid pace with much of this growth occurring within the incorporated cities, reflecting Placer County's General Plan policy to steer growth towards the cities.

The unincorporated county area had moderate growth compared to cities in the county, and a slightly higher rate of growth than the state in most years. Table 2 shows population, households, average household size, and housing units for unincorporated and incorporated Placer County and the State of California for 2000, 2010, and 2019. The table also shows 2000 to 2010 and 2010 to 2019 absolute growth and average annual growth rate (AAGR).

Unincorporated Placer County's population grew at an AAGR of 0.7 percent between 2000 and 2010. This was slightly lower than California's growth rate of 1 percent. Housing units increased at a slightly faster rate than population for unincorporated Placer County between 2000 and 2010. In California, the average household size increased by 0.003 person from 2000 to 2010 because population grew faster than the number of housing units.

From 2010 to 2019, Placer County as a whole had a 3.4 percent AAGR for population, a rate nearly three times California's population AAGR of 1.0 percent during this period. Most of this growth was in the incorporated areas, where the AAGR was 5.0 percent between 2000 and 2010. Growth in unincorporated areas slowed to an AAGR of 0.7 percent.

Table 2. Population, Households, Housing Size, and Housing Units

Population, Households, Housing Size, and Housing Units Placer County and California 2000, 2010, and 2019									
	Unincorporated Areas			Incorporated Areas			California		
	2000	2010	2019	2000	2010	2019	2000	2010	2019
Population									
Number	100,701	108,128	116,170	147,698	240,304	280,521	33,873,086	37,253,956	39,927,315
Growth from Previous Period	16,474	7,427	8,042	59,129	92,606	40,217	4,114,873	3,380,870	2,673,359
% AAGR from Previous Period	1.8%	0.7%	0.8%	5.2%	5.0%	1.7%	1.3%	1.0%	0.8%
Households									
Number	37,334	41,351	42,914	56,048	91,276	102,997	11,502,871	12,577,498	13,085,036
Growth from Previous Period	6,505	4,017	1,563	22,776	35,228	11,721	1,122,015	1,074,627	507,538
% AAGR from Previous Period	1.9%	1.0%	0.4%	5.4%	5.0%	1.4%	1.0%	0.9%	0.4%
Average Household Size	2.66	2.57	2.66	2.61	2.61	2.71	2.87	2.9	2.99
Housing Units									
Number	48,433	55,891	57,990	58,869	96,757	109,558	12,214,550	13,680,081	14,235,093
Growth from Previous Period	5,926	7,458	2,099	23,497	37,888	12,801	1,032,037	1,465,531	555,012
% AAGR from Previous Period	1.3%	1.4%	0.4%	5.2%	5.1%	0.5%	0.9%	1.1%	0.5%

Source: 2021-2019 Placer County Housing Element

Placer County uses a Growth Management tool that local governments use to prevent urban sprawl and preserve natural resources and agriculture. Growth management measures, such as urban limit lines (ULLs), can in some instances increase the cost of affordable housing by limiting the amount of land for new development. Though Placer County does not have a ULL, a policy in its 1994 General Plan references growth management. Policy 1.M.1 in the Land Use Element states:

"The County shall concentrate most new growth within existing communities emphasizing infill development, intensified use of existing development, and expanded services, so individual communities become more complete, diverse, and balanced."

The General Plan also recognizes that as the county continues to grow, additional areas may be identified as being suitable for development at urban or suburban densities and intensities.

Placer County General Plan

The following general plan policies are relevant to and consistent with the proposed project.

Goals

3.A: To provide for the long-range planning and development of the County's roadway system to ensure the safe and efficient movement of people and goods.

3.A.14. Placer County shall participate with other jurisdictions and Caltrans in the planning and programming of improvements to the State Highway system, in accordance with state and federal transportation planning and programming procedures, so as to maintain acceptable levels of service for Placer County residents on all State Highways in the County. Placer County shall participate with Caltrans and others to maintain adopted level of service (LOS) standards as follows:

a. For State Highways 49, 65, and 267 Placer County's participation shall be in proportion to traffic impacts from its locally generated traffic. The following general plan policies are relevant to and consistent with the proposed project.

4.J.5. The County should plan and approve residential uses in those areas that are most accessible to school sites in order to enhance neighborhoods, minimize transportation requirements and costs, and minimize safety problems.

Placer County Regional Transportation Plan

The following polices included in the Placer RTP are relevant to the project.

Objective A: Identify and prioritize improvements to the roadway system.

Policies:

1. Work with Caltrans and local jurisdictions to identify roadways in need of major upgrading to meet standards for safety and design, maximize system efficiency and effectiveness, and plan their improvement through regional planning, corridor system management planning, and capital improvement programming.

Objective B: Construct, maintain, and upgrade roadways to meet current safety standards.

Policies:

1. Work in partnership with Caltrans and local jurisdictions to identify, improve, and enhance safety conditions on state highways.
2. Prioritize roadway projects, including maintenance and repair, required to maintain safety standards.

Environmental Consequences

Build Alternative

Implementation of the project would result in the conversion of private land not currently used for transportation proposes to transportation Right of Way (ROW). In addition, temporary construction easements will be obtained for construction. With the exception of the conversion of land to transportation uses and the use of land for construction purposes, no change in land use or underlying zoning designation within the study area will occur as a result of implementing the proposed project.

No Build Alternative

The No Build Alternative would not meet the purpose and need or traffic operations in the study area. Many of the goals, policies, and actions in the General Plan are focused on maintaining a transportation system that is safe and efficient for all modes of transportation. The No Build Alternative would not address the current safety issues or traffic delay.

Avoidance, Minimization, and/or Mitigation Measures

No potential conflicts with current or planned land uses in the study area are anticipated. Therefore, no avoidance, minimization, or mitigation measures are required.

2.1.3 GROWTH

Regulatory Setting

The Council on Environmental Quality (CEQ) regulations, which establish the steps necessary to comply with the National Environmental Policy Act (NEPA) of 1969, require evaluation of the potential environmental effects of all proposed federal activities and programs. This provision includes a requirement to examine indirect effects, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The CEQ regulations (40 Code of Federal Regulations [CFR] 1508.8) refer to these consequences as indirect impacts. Indirect impacts may include changes in land use, economic vitality, and population density, which are all elements of growth.

The California Environmental Quality Act (CEQA) also requires the analysis of a project's potential to induce growth. The CEQA guidelines (Section 15126.2[d]) require that environmental documents "…discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment…"

Affected Environment

According to Placer County Regional Transportation Plan 2040, Placer County is home to about 375,000 residents, with 4 percent living in Auburn, 0.6 percent in Colfax, 12 percent in Lincoln, 2 percent in Loomis, 16 percent in Rocklin, 34 percent in Roseville, and 32 percent living in unincorporated areas. Table 3 illustrates Placer County's steady population growth over recent years. This steady growth in population continues to increase demand on Placer County's transportation network, increasing the need for greater roadway capacity, increased investment in alternative transportation infrastructure, and continued partnership with local housing, land use, and economic development efforts.

Table 3. Placer County Total Population 2010 -2017

Placer	2010	2011	2012	2013	2014	2015	2016	2017
Total Population	336,477	343,554	350,074	355,924	361,518	366,280	370,571	374,985
Change Since Previous Year	-	2%	2%	2%	2%	1%	1%	1%

Source: Placer County Regional Transportation Plan 2040

Environmental Consequences

Build Alternatives

Analysis of the Build Alternatives followed the growth-related analysis and indirect impacts as stated in the first-cut screening guidelines provided in Caltrans' *Guidelines for Preparers of Growth-Related, Indirect Impact Analyses* (California Department of Transportation 2006). The first-cut screening analysis focused on addressing the following questions.

- To what extent would travel times, travel cost, or accessibility to employment, shopping, or other destinations be changed? Would this change affect travel behavior, trip patterns, or the attractiveness of some areas to development over others?

Implementing the Build Alternatives would rehabilitate the existing roadway to reduce maintenance expenditures; improve safety, sight distance and traffic operations; and address non-standard shoulders. The project will improve non-standard vertical curves, conflicting movements for local traffic accessing the highway, and crossover accidents.

Access to destinations is not expected to change. There would be no changes to land use. Since SR 49 is an existing roadway in Placer County, the proposed project would not provide additional access to undeveloped areas. Furthermore, no new or expanded infrastructure, housing, or other similar permanent physical changes to the environment would be necessary as an indirect consequence of the proposed project.

- To what extent would change in accessibility affect growth or land use change—its location, rate, type, or amount?

The purpose of the project is to improve safety and reduce potential for collisions along this section of SR 49 with the addition of a median barrier. The project is not anticipated to provide access to new areas or change accessibility in any way that would exert growth pressure. The proposed modifications to SR 49 would not lead to additional planned or unplanned development.

- To what extent would resources of concern be affected by this growth or land use change?

Project-related growth is not foreseen. The Build Alternatives would not result in changes in accessibility because no new access points are being created and the number of lanes in each direction would stay the same. Development in this foothill area is difficult due to the combination of tree-covered rolling hills and stream channels. Based on the above first-cut screening analysis, no additional analysis related to growth is required.

No Build Alternative

The No Build Alternative would not affect existing land uses because the proposed project would not be constructed and there would be no change in land use.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

2.1.4 COMMUNITY CHARACTER AND COHESION

Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969, as amended, established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). The Federal Highway Administration (FHWA) in its implementation of NEPA (23 USC 109[h]) directs that final decisions on projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

Under the California Environmental Quality Act (CEQA), an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since this project would result in physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the project's effects.

Affected Environment

Population and Housing

The following census tracts are within the study area.

- Census Tract 216.04
- Census Tract 218.01

The study area includes two census tracts surrounding SR 49 and the Environmental Study Limits (ESL). Census Tracts 216.04 and 218.01 surround the greater project area and north of the city of Auburn. These are the census tracts that were analyzed for direct and indirect impacts. For demographic data, the census tracts within the 0.25 mile study area radius were used to gather information on race/ethnicity and income for the surrounding community.

Regional Population Characteristics

Table 4 shows the population and race/ethnicity data for the study area and census tracts. As presented in Table 4, Non-Hispanic Whites are the largest racial/ethnicity group for the two census tracts. The total population in the two census tracts is 8,599. 7,505 are Non-Hispanic White, making this ethic group 87 percent of the population. The second largest population ethic group is Hispanic or Latino. The third largest ethnic group is the Non-Hispanic Asian which comprises 1 percent of the minority population. Native Hawaiian and Other Pacific Islander is the smallest population in the census tracts. Of the total population, minority populations make up the about 13 percent or 1,094.

The population for Census Tract 216.04 is over 85 percent Non-Hispanic White and 2 percent is Non-Hispanic Asian. Census Tract 218.01 has a higher Non-Hispanic Asian population. It contains 8 percent of Hispanic or Latino and 89 percent of Non-Hispanic White.

In the 0.25-mile buffer in the Census Tract 216.04, has less population compared to Census Tract 218.01. The largest ethnic group in both census tracts is the Non-Hispanic Whites followed by Hispanic or Latino.

Table 4. Race and Ethnicity Data

Area	Total Population	Non-Hispanic White	Non-Hispanic Black or African American	Non-Hispanic American Indian and Alaska Native	Non-Hispanic Asian	Non-Hispanic Native Hawaiian and Other Pacific Islander	Non-Hispanic Some Other Race	Non-Hispanic Two or More Races	Hispanic or Latino
Placer County	398,329	284,331	7,663	1,504	32,594	700	160	13,996	57,381
Census Tract 216.04	3,634	3,092	12	14	57	-	-	40	419
Census Tract 218.01	4,965	4,413	4	9	64	-	-	71	404

Source: U.S. Census Bureau 2021

Neighborhood Surrounding the Project Area

The study area has a significant number of large parcels, some of which have low-density and single-family residential development. The area can be characterized as rural and sparsely developed.

This stretch of SR 49 is the major route connecting the city of Auburn and the city of Grass Valley. Grass Valley is a city in Nevada County situated at roughly 2,500 feet elevation; it is a rural area with a population around 13,000. South of Grass Valley is the city of Auburn; it has a population of about 14,000. The project area is rural. South of the project area, there is a large shopping center, hospitals, an airport, housing developments and recreational facilities. North of the project is mostly rural residential properties, farmland, and the Nevada/Placer County border.

Table 5 presents the population and age groups. As shown in the table, the age group within the study area with the lowest percentage is between 20 to 29. The group with the highest percentage of people in the study area are between the ages of 40 to 59. The age group with the second highest percentage is between the ages of 60 to 69. These percentage are consistent among the two census tracts and the county. Although age groups vary in the study area, 75 percent of the population is over 30 years of age.

Table 5. Population and Age Data for the Study Area

Area	Population by Age	Population 0 to 9	Population 10 to 19	Population 20 to 29	Population 30 to 39	Population 40 to 59	Population 60 to 69	Population 70 and over
Placer County	398,329	44,893	52,172	40,083	49,084	105,879	50,108	56,110
Census Tract 216.04	3,634	342	302	209	251	1,109	733	688
Census Tract 218.01	4,965	347	468	447	458	1,289	1,005	951

Source: U.S. Census Bureau 2021

Housing Characteristics

Table 6 presents the housing characteristics. Most of the parcels are zoned agriculture and are developed with single family residences. Single-family houses are the most common type of housing units in the study area. Census Tract 216.04 and 218.01 have more single units.

Table 6. Types of Housing Unit in Census Tracts

Area	Total Occupancy Housing Units	Total Housing Units 1-unit	Total Housing Units 2 or More Units	Mobile home	Boat, RV, van, etc.
Placer County	168,942	136,780	27,822	4,031	309
Census Tract 216.04	1,394	1,324	32	38	-
Census Tract 218.01	2,007	1,972	17	18	-

Source: U.S. Census Bureau 2021

Table 7 describes the owner and renter occupancy. The two census tracts have a total of 3,401 units. Of the total, 2,973 are owner occupied, and 200 are renters occupied. Census Tract 216.04 has the largest number of renters occupying housing units. Census Tract 216.04 and 218.01 cover the ESL and are within the 0.25-mile buffer. Overall, there are more homes occupied by owners.

Table 7. Total Population in Occupied Housing Unit by Tenure

Area	Total Housing Units	Occupied Housing Units	Owner-Occupied	Renter-Occupied	Percent Housing Occupied by Owner
Placer County	168,942	147,236	106,512	40,724	0.72
Census Tract 216.04	1,394	1,273	1,155	118	0.91
Census Tract 218.01	2,007	1,900	1,818	82	0.96

Source: U.S. Census Bureau 2021

Environmental Consequences - Regional Population Characteristics

No Build Alternatives

The No Build Alternative would not reduce community cohesion, divide the community, separate residences from community facilities, or result in substantial growth. Therefore, neither construction nor operation of the build alternatives would result in disproportionately high and adverse effects related to community cohesion.

Build Alternatives

The proposed project would not affect growth and would not contribute to changes in the population characteristics of the region and study area. All Alternatives would require property acquisitions for intersection and shoulder improvements. Alternative 2 and 3 would require property acquisitions leading to displacement, however, these displacements would not be enough to cause changes to the regional population due to the relatively small number of relocations required.

Neighborhood/Communities/Community Character

No Build Alternatives

- Regional Population Characteristic

There would be no changes to neighborhoods or community character under the No Build Alternative because the rural character of the study area would not change.

Build Alternatives

The proposed project would slightly change the character of the study area because it would install a median barrier on a 1.3-mile section of SR 49 and alter the zoning of the property that will be acquired for intersection and shoulder improvements. However, the proposed project will not provide any additional access to areas that are undeveloped. It is not anticipated that the proposed project would result in any changes to the neighborhoods or community character of the study area.

Housing

No Build Alternatives

There would be no changes to housing under the No Build Alternative because the proposed project would not be implemented, avoiding residential acquisitions.

Build Alternatives

Alternative 1 would not require acquisition of any residential home sites. However, Alternatives 2 and 3 would require acquisition of 2 residential homes. See Section 2.1.5, Relocations and Real Property Acquisition for a full discussion of the residential acquisitions required as part of the project. As discussed in Section 2.1.5, there is adequate replacement housing within the replacement area (i.e., Placer County) for those displaced, and the relocation of residents would not pose an impact on the community. Relocation assistance would be provided to persons in accordance with the Uniform Relocation Act and Real Property Acquisition Policies Act of 1970, as amended, to ensure adequate relocation and decent, safe, and sanitary housing for displaced residents. All eligible displaces would be entitled to moving expenses. In addition, as discussed in Section 2.1.3, growth is not reasonably foreseeable, and no development is anticipated to result from the project. Consequently, no change to the local housing market would occur.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

Economic Conditions – Regional Economy and Business Activity

Placer County's economy is diverse and growing. Placer County's major employers include healthcare providers such as Kaiser Permanente and Sutter Health; technology companies

such as TSI Semiconductors and Oracle; hospitality companies including Northstar Resort and Thunder Valley Casino; and government entities like Placer County and the City of Roseville. Table 8 summarizes employment in Placer County by sector.

Table 8. Employment in Placer County

Employment Distribution by Sector	
Employment Sector	**% Total in 2017**
Agriculture, Natural Resources, and Mining	0.7%
Construction	6.9%
Financial Activities	8.5%
Information	2.3%
Transportation, Warehousing, and Utilities	4.1%
Government and Public Administration	7.1%
Educational and Health Services	22.6%
Other Services	4.8%
Professional and Business Services	12.6%
Arts, Leisure, and Hospitality	9.3%
Manufacturing	6.4%
Wholesale Trade and Retail	14.7%
Other Services	4.8%
Source: US Census Bureau 2017 5-year American Community Survey	

Source: Placer Regional Transportation Plan 2040

Table 9 shows the percent below poverty level for Census Tract 2016.04, Census Tract 218.01, and Nevada County. The poverty status in the project area is lower than the county level.

Table 9. Poverty Status in the Past 12 Months

Area	Total Households	Poverty Status in the Past 12 Months - Below Poverty Level	Poverty Status in the Past 12 Month - At or Above Poverty Level	Percent Below Poverty Level
Placer County	142,855	11,630	131,225	8%
Census Tract 216.04	1,273	34	1,239	3%
Census Tract 218.01	1,900	109	1,791	6%

Source: U.S. Census Bureau 2021

Table 10 shows the major industries in Placer County which include manufacturing, retail, technology, agriculture, construction, and health services. The main job sector for residents within the study area comprises educational services, health care, social assistance, professional scientific management, and administrative Waste Management Services. The proposed project is a safety project on a 1.9-mile section of SR 49 that is primarily used as a commuter corridor and to transport goods. The project could possibly cause some temporary construction delays but will ultimately make this section of the corridor safer for the traveling public.

Table 10. Placer County Industry

Area	Agriculture Forestry Fishing Hunting Mining	Construction	Manufacturing	Wholesale Trade	Retail Trade	Transportation Warehousing Utilities	Information	Finance Insurance Real Estate Rental Leasing	Professional Scientific Management Administrative Waste Management Services	Educational Services Health Care Social Assistance	Arts, Entertainment Recreation Accommodation Food Services	Other Services	Public Administration
Placer County	491	12,108	10,835	4,096	23,175	9,583	3,642	16,023	25,759	42,730	18,396	9,572	14,211
Census Tract 216.04	26	174	96	-	191	88	16	86	222	564	48	128	88
Census Tract 218.01	23	160	88	90	277	147	104	45	300	318	229	103	298

Source: U.S. Census Bureau 2021

Environmental Consequences - Regional Economy and Business Activity

No Build Alternative

There would be no changes to the regional economy under the No Build Alternatives.

Build Alternative

There would be no changes to the regional economy under the Build Alternatives.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

2.1.5 RELOCATIONS AND REAL PROPERTY ACQUISITION

Regulatory Setting

The Department's Relocation Assistance Program (RAP) is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act), and Title 49 Code of Federal Regulations (CFR) Part 24. The purpose of the RAP is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix C for a summary of the RAP.

All relocation services and benefits are administered without regard to race, color, national origin, persons with disabilities, religion, age, or sex. Please see Appendix B for a copy of the Department's Title VI Policy Statement.

Affected Environment

A Community Impact Assessment (April 2021) and a Relocation Impact Statement (April 2021) were conducted for the proposed project. The affected environment consists of acquisitions that would be acquired under each alternative. The proposed project would acquired strips of land from parcels, along with some full parcels on both the east and west sides of SR 49 in the study area.

Alternative 1 will not require any full acquistions which will lead to residential displacement.

Alternatives 2 and 3 will require full acquisition of two properties and one partial acquisition that will lead to two residential displacements.

Environmental Consequences

No Build Alternative

There would be no property acquisitions under the No Build Alternative because the project would not be implemented.

Build Alternatives

Alternative 1 would not acquire any residental properties, but will acquire strips of parcels along the project limit. Alternatives 2 and 3 would acquire two residential properties and strips of parcels along the project limit. No non-residential, commercial properties will be acquired.

The relocation resources available for residential displacement are listed below:

Based upon available data, it appears there are sufficient residential and non-residential parcels available in the replacement area (Placer County) for all parcels affected by build Alternatives 2 and 3 that would be equal to or better than the displacement properties.

It does not appear that the Last Resort Housing Program will be necessary, as the residential housing stock in the replacement area is ample. However, should the housing market improve and prices increase, the Last Resort Housing Program would be available to assist any residential displaces unable to afford comparable replacement housing.

As part of project implementation, all acquisitions would be conducted in accordance with the Federal Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and the California Relocation Act.

Avoidance, Minimization, and/or Mitigation Measures

Any acquisitions and compensation to property owners would occur consistent with the Uniform Act, as amended. In accordance with this act, compensation is provided to eligible recipients for property acquisitions. Relocation assistance payments and counseling would be provided by the transportation agencies to persons and businesses in accordance with the act, as amended, to ensure adequate relocation and a decent, safe, and sanitary home for displaced residents. All eligible displacees would be entitled to moving expenses. All benefits and services would be provided equitably to all residential and business displacees without regard to race, color, religion, age, national origins, and disability, as specified under Title VI of the Civil Rights Act of 1964. All relocation activities would be conducted by the implementing agencies in accordance with the Uniform Act, as amended. Relocation resources would be available to all displacees without discrimination

2.1.6 UTILITIES/EMERGENCY SERVICES

Affected Environment

Emergency Services

The Placer County Sheriff's Office serves the people of Placer County by providing law enforcement to the unincorporated areas, from the Sacramento County line to the Nevada state line at Lake Tahoe, plus providing contract law enforcement services to the city of Colfax and the township of Loomis.

Utilities

AT&T, PG&E, Comcast and Nevada Irrigation District (NID) utilities are located within the project area. AT&T and PG&E have overhead utility lines that are located on the easterly side of the project. Comcast has underground fiber optic lines along the westerly side of the project. NID also has underground facilities located within the project limits.

Public Sewage

Placer County does not comprehensively provide wastewater collection and treatment to all areas of the county. The project area is within a rural part of Placer County and the primary source of water is supplied by individual wells and sewage through septic tank systems. Water and sewage services within the county are provided by the following:

- Tahoe City Public Utility District
- North Tahoe Public Utility District
- Northstar Community Services District
- Squaw Valley Public Service District
- Sierra Lakes County Water District
- Alpine Springs County Water District
- Donner Summit Public Utilities District

Environmental Consequences

Emergency Services

No Build Alternative

The No Build Alternative has the potential to affect emergency services, because the intersections within the study area can create many conflict points between motorists, pedestrians, and bicyclists. These conflict points have the potential to cause congestion, which could potentially cause delays in and possibly prevent emergency services from reaching the destinations in time. These conditions would continue, and likely worsen over time, under the No Build Alternative.

Build Alternatives

The Build Alternatives would not result in direct or long-term impacts on emergency services. During construction, lane closures may be required. Any required temporary lane closures would be coordinated with emergency service providers so as not to hinder emergency responses. The build alternatives are not anticipated to adversely affect response time for emergency services associated with fire station or police department personnel as there will be an emergency passageway (concrete median barrier opening) located approximately 300 feet to the north of Cramer Road. This emergency passageway will allow emergency services traveling north to make a U-turn on SR 49 to head south to turn right onto Cramer Road. The build alternatives could improve response times of emergency services by improving traffic flow and reducing delay. In addition, the build alternatives are intended to reduce conflicts in the study area, which would result in fewer emergency service calls.

Utilities

No Build Alternative

The No Build Alternative would not affect utilities.

Build Alternatives

Minor utilities will be affected with this project. The underground fiber optics line and the overhead utilities will be affected by the project because construction of the proposed intersection improvements and removal of the roadway surface and decompaction of the road base will disrupt the earth surrounding the transmission line. Upon project approval and finalization of the environmental document, Caltrans will be authorized to notify the owner of the utility that there is a conflict between the utility and Caltrans' proposed project. Utility Conflict Mapping will be sent, along with the anticipated schedule of the proposed project. It is expected that once notice of the conflict is given, coordination will commence between the utility owner and Caltrans to develop a utility relocation plan.

Avoidance, Minimization, and/or Mitigation Measures

Any required temporary closures would be coordinated with emergency service providers so as not to hinder emergency responses. As part of construction, the project proponents will prepare and implement a Traffic Management Plan (TMP) to avoid and minimize potential impacts. The TMP would ensure emergency vehicles and school bus routes are not impeded. The TMP would reduce impacts of the proposed project on temporary access and circulation caused by potential traffic delays during construction.

2.1.7 TRAFFIC AND TRANSPORTATION/PEDESTRIAN AND BICYCLE FACILITIES

Regulatory Setting

Caltrans, as assigned by the Federal Highway Administration (FHWA), directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of Federal-aid highway projects (see 23 Code of Federal Regulations [CFR] 652). It further directs that the special needs of the elderly and the disabled must be considered in all Federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, the U.S. Department of Transportation (USDOT) issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the USDOT regulations (49 CFR 27) implementing Section 504 of the Rehabilitation Act (29 United States Code [USC] 794). The FHWA has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to federal-aid projects, including Transportation Enhancement Activities.

Affected Environment

A Transportation Analysis Report was completed by Fehr and Peers in April 2021. The transportation analysis study locations comprise highway segments and intersections.

This segment of SR 49 from Lorenson Road/Florence Lane to Lone Star Road has a history of cross centerline collisions. The Traffic Accident Surveillance and Analysis System (TASAS) was queried to generate the collision history for SR 49 in the project area for a three-year period from January 2015 to December 2017. This period is reported rather than the most recent three-year period because this data was referenced when generating the project need. The number of collisions by severity and compares the collision rate to statewide averages. In the three-year period, 34 collisions occurred, one resulted in a fatality, 12 resulted in injury, and 21 resulted in property damage only. Out of these 34 collisions, two were cross-centerline and head-on, six were sideswipes, five were rear ends, nine were broadside collisions, five were object collisions, four were overturned vehicles, and three were not reported. The fatality collision rate is more than the statewide average for similar facilities although the fatality plus injury and total collision rates are lower than the corresponding statewide averages.

Collisions are most frequent near Lorenson Road/Florence Lane and Lone Star Road. These locations have the highest volume of conflicting traffic. Severe collisions also occur near the Cramer Road intersection, and the fatality-related crash occurred just south of the intersection.

The most frequent collision type is broadside (26 percent), followed by other (20 percent) and sideswipe (18 percent). Rear end and hit object collisions (15 percent each) are next most common. Two head-on collisions occurred in the three-year period. The collision types at the high frequency crash locations are primarily broadside collisions.

SR 49 is a regional highway that connects SR 20 in Grass Valley and I-80 in Auburn. In the study area, SR 49 is a four-lane highway with a continuous two-way left-turn lane median and paved shoulders. Left-turn lanes are striped on SR 49 at the three study intersections. Right-turn lanes are provided southbound at Lone Star Road, Cramer Road, and Lorenson Road and northbound at Lone Star Road. All study intersections have side-street stop control. The nearest signalized intersections are 3.3 miles north of Lone Star Road at Wolf Road/Combie Road and 1.5 miles south of Lorenson Road/Florence Lane at Dry Creek Road. The study area extends along SR 49 from Joeger Road (PM R8.0) to Rio Oso Road/Overhill Drive (PM 11.2).

The study highway segments are listed below (Figure **5**).

- Rio Oso Road/Overhill Drive to Lone Star Road
- Lone Star Road to Cramer Road
- Cramer Road to Lorenson Road/Florence Lane
- Lorenson Road/Florence Lane to Joeger Road

The study intersections are listed below.

1. SR 49/Lone Star Road
2. SR 49/Cramer Road
3. SR 49/Lorenson Road/Florence Lane

The intersection crossroads are described as follows.

- Lorenson Road is a local road that serves parcels west of SR 49 and is not a through road.

- Florence Lane is a local road that serves rural and residential land uses east of SR 49. Connection to Dry Creek Road near I-80 is provided via Virginia Drive, Stanley Drive, and Christian Valley Road.
- Cramer Road is a local road that serves rural land uses west of SR 49 and extends to Bell Road, a local road that parallels SR 49 to the west.
- Lone Star Road is a local road that serves rural residential and agricultural.

Figure 5. Highway Segments and Intersections in the Study Area

Existing Conditions for Highway Study Segments and Study Intersections

To measure the operational status of the local roadway network, transportation engineers and planners use a grading system called level of service (LOS). Level of service is a description of the quality of operation of a roadway segment or intersection, ranging from LOS A (for free-flowing traffic with little to no delay) to LOS F (where traffic in excess of capacity introduces significant delays).

Transit System

Gold Country Stage provides transit bus services, along SR 49 within the study area. Prior to the COVID-19 pandemic, Route 5 served the corridor five times per day in each direction (with about two-hour headways) on weekdays between Grass Valley and Auburn. The current reduced schedule is three times per day. Route 5 has stops in both directions on SR 49 in the project area at Lorenson Road/Florence Lane and Lone Star Road.

Freight System

SR 49 is a Terminal Access route for truck traffic in the study area. Terminal Access routes accommodate Surfaces Transportation Assistance Act (STAA) trucks. SR 49 provides access for agricultural trucks and connects industrial areas in Grass Valley and Auburn to the rest of the state.

Daily truck volume on SR 49 is estimated at 2,360 trucks per day, using the total volume measured in October 2019 and the reported truck percentage of 7 percent. According to a recent (2013) count reported in Annual Average Daily Truck Traffic on the California State Highway System (Caltrans 2016) at Lorenson Road, the truck volume is divided among 79 percent two-axle trucks, 9 percent three- or four-axle trucks, and 12 percent trucks with five or more axles.

The District 3 Goods Movement Study (February 2015) identified SR 49 in the study area as middle priority for improving truck mobility under the base year conditions. In the project area, no deficiencies were identified for bridge vertical clearance, bridge permit weight, or distressed bridges.

Highway Study Segment

Under existing (2019) conditions, this segment of the highway operates at LOS B for SR 49 for both northbound and southbound directions during the AM and PM peak hours within the project limits.

Study Intersections

Under existing (2019) conditions, the study intersections; SR 49/Lorenson Road/Florence Lane intersection operates at LOS D during the AM peak hour and LOS F in the PM peak hour, while the two other intersections (SR 49/Lone Star Road and SR 49/Cramer Road) operate at LOS F during both AM and PM peak hours. More congestion occurs in the PM peak hour at all study intersections due to higher through volumes on SR 49.

Opening Year (2024) Conditions for Highway Study Segments and Study Intersections

Highway Study Segment

Compared to existing (2019) conditions, operations under the opening year (2024) the addition of traffic volume does not affect the density and LOS for the highway segments. LOS would be A in the off-peak direction (southbound PM and northbound AM) and B for the peak direction (northbound PM and southbound AM).

Study Intersections

Intersection operations were analyzed for opening year (2024) conditions during the AM and PM peak hours. During the AM and PM peak hours, build alternatives 1 and 2 would have similar results. At intersections SR49/Lone Star Road and SR49/Lorenson Road/Florence Road would provide LOS B conditions and at SR49/Cramer Road would provide LOS C or better conditions for AM and PM peak hours.

Alternative 3, would provide LOS C or better conditions at SR49/Cramer Road and LOS F at SR49/Lone Star Road and SR49/Lorenson Road/Florence Road intersections.

The no-build alternative would provide LOS F conditions for all intersection.

Horizon Year (2044) Conditions for Highway Study Segments and Study Intersections

Highway Study Segment

Compared to existing (2019) conditions, operations under the horizon year (2044) the addition of traffic volume does not affect the density and LOS for the highway segments. LOS would be A in the off-peak direction (southbound PM and northbound AM) and B for the peak direction (northbound PM and southbound AM).

Study Intersections

Intersection operations were analyzed for horizon year (2044) conditions during the AM and PM peak hours.

Alternative 1 would improve the intersections SR49/Lone Star Road and SR49/Lorenson Road/Florence Road to LOS B and LOS C conditions at SR49/Cramer Road.

The movements to and from the side roads onto SR 49 at the roundabouts would see the most improvement in delay. The SR 49 approaches would have increased delay under this alternative.

Alternative 2 would improve all intersections to LOS C or better conditions.

Alternative 3, would provide LOS C conditions at SR49/Cramer Road and LOS F at SR49/Lone Star Road and SR49/Lorenson Road/Florence Road intersections.

The no-build alternative would provide LOS F conditions for all intersection.

Transit System

Gold Country Stage provides transit service along SR 49 in the study area. Prior to the COVID-19 pandemic, Route 5 served the corridor five times per day in each direction (with about two-hour headways) on weekdays between Grass Valley and Auburn. The current reduced schedule is three times per day. Route 5 has stops in both directions on SR 49 in the project area at Lorenson Road/Florence Lane and Lone Star Road.

Bicycle/Pedestrian Facilities

SR49 is a conventional highway with no pedestrian or bicycle restrictions. Pedestrians and bikes are allowed to use the shoulder.

Bicycle volume is very low along the corridor. No bicyclists were observed during field observations. Bicycles were not reported in the 24-hour counts collected at the three study intersections.

Given that the posted speed limit for vehicle traffic is 65 miles per hour, pedestrians are more likely to use the unpaved shoulder to travel as far from the vehicle lanes as possible. The 24-hour counts in October 2019 measured a total of three pedestrians crossing at Lorenson Road/Florence Lane, one pedestrian at Cramer Road, and one pedestrian at Lone Star Road.

Freight System

SR 49 is a Terminal Access route for truck traffic in the study area. Terminal Access routes accommodate Surfaces Transportation Assistance Act (STAA) trucks. SR 49 provides access for agricultural trucks and connects industrial areas in Grass Valley and Auburn to the rest of the state.

Daily truck volume on SR 49 is estimated at 2,360 trucks per day, using the total volume measured in October 2019 and the reported truck percentage of 7 percent. According to a recent (2013) count reported in Annual Average Daily Truck Traffic on the California State Highway System (Caltrans 2016) at Lorenson Road, the truck volume is divided among 79 percent two-axle trucks, 9 percent three- or four-axle trucks, and 12 percent trucks with five or more axles.

The District 3 Goods Movement Study (February 2015) identified SR 49 in the study area as middle priority for improving truck mobility under the base year conditions. In the project area, no deficiencies were identified for bridge vertical clearance, bridge permit weight, or distressed bridges.

Environmental Consequences

Induced Travel

Induced travel is the phenomenon wherein additional capacity leads to additional travel demand. The proposed project does not provide additional capacity. The number of through lanes on SR 49 would be the same under all alternatives. Some alternatives would add intersection turn lanes, but these operational improvements will not provide additional through capacity. Therefore, the proposed project is not expected to induce travel.

Alternatives Comparison Summary

Study Intersections

The proposed concrete median barrier would reduce cross median collisions by physically preventing inattentive drivers from crossing the median into the opposing direction of travel. In addition, the following conflict points would be eliminated.

- Vehicles will be prohibited from making a left turn from SR 49 to access Cramer Road and all driveways between Lorenson Road/Florence Lane and Lone Star Road.
- Vehicles will be prohibited from making a left turn onto SR 49 or a through movement across SR 49 from Cramer Road and all driveways between Lorenson Road/Florence Lane and Lone Star Road.

These movements will be diverted to make U-turns at either Lorenson Road/Florence Lane or Lone Star Road.

The Crash Modification Factors Clearinghouse website shows three four-star rated studies for the countermeasure of "install concrete guardrail in median". One study reported that the treatment was 100 percent effective at preventing cross median and head on collisions (that is, a crash modification factor of zero). Another study showed a 20 percent reduction in sideswipe collisions. The last study reported a 120 percent increase in single vehicle collisions.

For Alternative 1, roundabouts would have a lower rate of severe collisions due to the lower speed (about 20 mph) needed to traverse the roundabout intersection compared to traffic signals (Alternative 2). With Alternative 2, vehicles can maintain facility free-flow speed of 65 mph when the signal is green, and with RCUTs (Alternative 3), vehicles can maintain 65 mph at all times. In addition, roundabout intersections minimize conflict points so that the potential for broadside collisions is reduced. Some increase in rear-end and hit object collisions may be expected with the introduction of traffic control for the SR 49 approaches.

For Alternative 2, an increase in rear end collisions would be anticipated in association with the installation of traffic signals as drivers are not accustomed to stopping at the intersections (as in Alternative 1). However, traffic signals can help to reduce broadside and sideswipe collisions that occur at intersections with side street stop control.

The RCUTs in Alternative 3 would eliminate conflict points associated with left turn and through movements from the minor roads at the affected intersections but introduce new conflict points at the turnarounds.

The following existing safety features should be maintained under the proposed project.

- Shoulder rumble strips to alert inattentive drivers
- Six-inch wide thermoplastic pavement markings to provide enhanced visibility of the striping during nighttime and when the pavement is wet
- Speed feedback signs to encourage drivers to obey the posted speed limit

While travel time would be higher for Alternatives 1 and 2, intersection delay would be lower. These two alternatives would have no intersection deficiencies (all study intersections would operate at LOS D or better). In contrast, Alternative 3 would have two deficient study locations and No Build Alternative would have three deficient study locations due to high delay for minor road approaches.

Alternatives 1 and 2 would also improve bicycle and pedestrian conditions compared to Alternatives 3 and the No Build Alternative. The proposed intersection improvements at Lorenson Road/Florence Lane and Lone Star Road (roundabouts and signals, respectively) would provide a designated crossing location for pedestrians and an opportunity for bicycles and pedestrians to cross SR 49 more comfortably and safely. However, both bicycle and pedestrian activity in the project area is low due to the adjacent low-density development.

Finally, the median barrier to be installed under Alternatives 1, 2, and 3 is expected to improve safety compared to the No Build Alternative. Alternative 2 and 3 would also have some intersection safety improvements as the more difficult left turn and through movements from the minor road would be either controlled by a signal (Alternative 2) or prohibited (Alternative 3).

Avoidance, Minimization, and/or Mitigation Measures

Since no project impacts would occur, no potential mitigation measures are recommended.

2.1.8 VISUAL/AESTHETICS

Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969, as amended, establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). To further emphasize this point, the Federal Highway Administration (FHWA), in its implementation of NEPA (23 USC 109[h]), directs that final decisions on projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

The California Environmental Quality Act (CEQA) establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of *aesthetic*, natural, scenic and historic environmental qualities" (CA Public Resources Code [PRC] Section 21001[b]).

California Streets and Highways Code Section 92.3 directs Caltrans to use drought resistant landscaping and recycled water when feasible, and incorporate native wildflowers and native and climate-appropriate vegetation into the planting design when appropriate.

Affected Environment

This section was prepared using information from the *Visual Impact Assessment* (VIA) technical report prepared for the project in September 2020. The VIA assesses follows the guidance outlined in the publication *Visual Impact Assessment for Highway Projects* published by the Federal Highway Administration (FHWA) in March 1981.

Project Setting

The project site is located on State Route 49 through Placer County and is a four-lane conventional rural highway, which serves local residents, commercial, tourist and recreational traffic traveling between Auburn and Grass Valley.

The visual settings throughout the project area is dominated by open space of undeveloped landforms with few manmade infrastructure and rural housing developments interspersed along the corridor, surrounded by an oak savannah landscape. This section of highway is characterized by the grassy rolling hills, naturally clumped native oak trees, manmade roadside slopes covered with native or naturalized grasslands.

This location of California State Route 49 is an Eligible Scenic Highway that retains the same scenic resources as an Officially Designated Scenic Highway, which is protected by the California Streets and Highways Code (SHC) Section 260 and a local Corridor Protection Program.

Resource Change

Visual Resource is comprised of Visual Character and Visual Quality, and the assessment between the two constitutes the Resource Change. Resource Change is quantified by averaging the determined Visual Character and the anticipated Visual Quality of the proposed project. All alternatives are evaluated for Resource Change through two (2) aerial Key Views contained within one (1) Visual Assessment Unit. One Key View is located at the northern portion of the project at the Lone Star Road and SR49 intersection, the other Key View is located at the southern portion of the project at the Lorenson Road and SR49 intersection. These Key Views were chosen at the terminus of the two main components of the project.

Alternative 1's expected Visual Character of the proposed project is generally compatible with the existing visual character of the corridor. This alternative entails replacement of the two intersections with large roundabouts, multiuse pedestrian paths, a median crash barrier, splitter islands, high contrast pavement, chicane approaches, and a retaining wall. Most project elements are related to the existing roadway, but some pattern elements of form, line, and texture are expected to be altered due to the quantity of vegetation and landscape scarring required to accommodate the road widening and new roundabouts. With the introduction of new high contrast elements of pedestrian crosswalks, colorized chicanes, and overhead illuminated warning signs, the corridor's color will be moderately changed; however, because the preponderance of the affected project area will be replaced with in-kind materials for the same purpose, the proposed project will remain very similar to existing conditions and there will be only minor changes to corridor's dominate pattern elements.

Alternative 2 and 3's expected Visual Character of the proposed projects is compatible with the existing visual character of the corridor. These alternatives maintain most of the existing pattern elements of form, line, and texture, though they will have a minor effect on the roadway's dominance due to roadway widening at the intersections of Lorenson and Lone Star. Because most pattern elements are consistent with roadway projects and the existing corridor, these alternatives are not expected to alter the corridor's visual character.

The Visual Quality of the existing conditions of the project area convey a generally intact visual corridor with some manmade visual intrusions, such as rural residential development, that interfere with the cultural and landscape intactness and unity. However, dominance of the pastoral oak savannah landscape throughout the mid and foregrounds of the visual corridor conveys high vividness on this stretch of SR49.

Alternative 1 will replace the existing two-way intersections at Lone Star and Lorenson Roads with a dissimilar configuration. By doing so, the footprint of the proposed ntersections

will expand in size to accommodate the roundabouts and require a retaining wall and an overall reduction in natural elements adjacent to the project thereby reducing the vividness of the corridor. Large cut slopes and/or a 100' long soldierpile retaining wall located on the southeastern side of the Lorenson intersection is expected to affect the visual unity and intactness by introducing a large noticeable manmade element to the corridor. At both Key Views, creating a high visibility intersection and approach will provide high contrast with the surrounding neutral and earthtone colors, further affecting the visual quality. However, the majority of pattern elements will remain intact. Though some of the foreground will be altered, the mid and background will retain the oak savannah landscape of wide open fields punctuated by native oak trees. Only at the intersection legs will there be any impact beyond the shoulder. Disturbed ground will be seeded with native seed thereby reducing observable impacts in the foreground. Therefore, the visual quality of the corridor will be affected, but not at a substantial level.

Alternative 2 and 3 will essentially maintain the unprotected two-way intersections at Lone and Lorenson Roads. The protected J-turns of Alternative 2 will require some modification to the roadway width at the intersection locations and require some additional paving on the shoulders where the new turn lanes cross the opposite lane traffic flow. A small acceleration lane is necessary to provide vehicles opportunity to return to the dominant traveling speed. Alternative 3's signalization will require road widening at the controlled intersections, but will otherwise maintain the roadway as it currently exists. Both alternatives will result in some loss of surrounding mature vegetation and introduce a few cut and fill slopes in the surrounding landscape. Therefore, Alternative 2 and 3 are not expected to affect the visual quality of the corridor beyond a minor level.

All alternatives will create a minor Visual Resource change for the proposed project. Alternative 1 would have the greatest visual effect, out of all of the alternatives, because the intersection configuration is the most visually distinct. However, Alternative 1 still retains almost all of the existing features of the corridor. Only minor alterations to the foreground is expected. Even though, Alternative 2 and 3 will create some visual quality impacts, the change will be very minimal, because the alternatives retain majority of the existing visual elements. All alternatives have a limited pattern element change and the Visual Character will be generally compatible with the existing conditions and will not affect the distinctiveness of the corridor.

Viewer Response

State Route 49 is a heavily trafficked highway due to the northerly route connecting the cities of Auburn, Grass Valley, and Nevada City, as well as the connection to interstate 80. Local traffic is expected to include commuters and commercial vehicles. Bicyclists are also noted users of the state route, Placer County lists the stretch between the cities of Auburn and Grass Valley as a class 2 bicycle route and this section is part of the 2018 Placer County Bike Master Plan.

A few small rural residential developments are adjacent and appurtenant to both sides of the roadway with clear unobstructed views to the project area; however, all residential homes located within the vicinity of the intersections marked for improvement do not have clear views onto the project. At the Lorenson intersection approximately five (5) homes are south of the intersection and may have distant but interrupted views of the project. Residents have obscured vantage points due to grade changes and functional (screening) landscape plants. At the Lone Star intersection, one (1) home is south of the intersection and three (3) are

north of the intersection. As with the Lorenson intersection, residents have distant but interrupted views of the project due to grade changes and functional landscape plants.

The eligible Scenic Highway designation of SR 49 indicates that the visual corridor is aesthetically valuable and does not contain many visual intrusions interrupting the natural beauty of the region. Because of this, all viewers groups are expected to be more sensitive to project related visual disruptions than other, similar, projects located outside of an eligible or Officially Designated Scenic Highway.

In general, groups with the longest duration, most frequent views are either specifically traveling to the region for the natural beauty of the region (tourists, bicyclists) or have constant views to the project area (residents), have the highest level of sensitivity to visual alterations. Groups with the shortest duration of views or are preoccupied with business (commercial vehicle operators, commuters/local traffic) have the least sensitivity.

Sensitivity is moderated by the distance, duration and quantity of views by each group, which is the highest from commuters/local traffic since they are expected to live in the general area. As a group, commercial vehicle operators have a low duration and quantity due to their infrequency at the project location and their preoccupation with business; Tourists and recreationalists have a moderate duration and quantity because they tend to be on vacation and seek out aesthetically pleasing locales, which means they travel at a slower pace and are more aware of their surroundings; commuters/local traffic has a moderate exposure due to their routine relationship with the roadway and familiarity with the setting; business owners and residents have a high exposure due to their proximity, adjacency, and constant visual interaction.

Environmental Consequences

Visual impacts

Visual impacts are determined by assessing changes to the visual resources (Resource Change) and predicting how people will react to those changes (Viewer Response). The average between the Resource Change and the Viewer Response is the Visual Impact. Each project alternative is evaluated individually for Visual Impact and future or past projects that may contribute to the roadway corridor's visual degradation are accounted as additional cumulative impact.

No Build Alternative

Under the No Build Alternative, the project would not be constructed and there would be no visual impacts on the existing visual character, visual quality, or affected viewer groups.

Build Alternatives

Alternative 1 will physically affect the surrounding landscape more than any other proposed intersection configuration; regardless, the new roundabouts will not create a substantial impact on the visual corridor. Alternative 1 will require vegetation removal, engineered slopes, and variation in corridor colorization. A large cut slope and/or a 100' long soldier-pile retaining wall located on the southeastern side of the Lorenson intersection is expected to affect the visual unity and intactness by introducing a noticeable manmade element to the corridor. When compared with the existing conditions, most of the pattern elements are

retained and only a minor visual quality loss is expected. Resource Change is expected to be Low.

Alternatives 2 and 3 will affect the surrounding landscape but to a lesser degree than Alternative 1 due to the reduced limit of disturbance. Alternatives 2 and 3 will require some vegetation removal, few engineered slopes, and little to no alteration of corridor colorization. Therefore, Visual Character is expected to retain nearly all of the existing pattern elements, while very few physical visual alterations will be implemented. Rating of the Resource Change for Alternatives 2 and 3 is expected to mirror Alternative 1's rating at Low. Because the corridor is considered an eligible scenic highway, users are expected to be sensitive to physical alterations in the visual environment or rated at Moderate, with Residents and Tourists being the most responsive to the visual changes. Even though, all alternatives propose some sort of visual impact to the corridor, the remaining corridor will still substantially maintain the same level of pattern characteristics, pattern elements and color that currently exist within the corridor.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are required.

2.1.9 CULTURAL RESOURCES

Regulatory Setting

The term "cultural resources," as used in this document, refers to the "built environment" (e.g., structures, bridges, railroads, water conveyance systems, etc.), places of traditional or cultural importance, and archaeological sites (both prehistoric and historic), regardless of significance. Under federal and state laws, cultural resources that meet certain criteria of significance are referred to by various terms including "historic properties," "historic sites," "historical resources," and "tribal cultural resources." Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places (NRHP). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP (36 Code of Federal Regulations [CFR] 800). On January 1, 2014, the First Amended Section 106 Programmatic Agreement (PA) among the Federal Highway Administration (FHWA), the ACHP, the California State Historic Preservation Officer (SHPO), and the Department went into effect for Department projects, both state and local, with FHWA involvement. The PA implements the ACHP's regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to the Department. The FHWA's responsibilities under the PA have been assigned to the Department as part of the Surface Transportation Project Delivery Program (23 United States Code [USC] 327).

The California Environmental Quality Act (CEQA) requires the consideration of cultural resources that are historical resources and tribal cultural resources, as well as "unique" archaeological resources. California Public Resources Code (PRC) Section 5024.1 established the California Register of Historical Resources (CRHR) and outlined the

necessary criteria for a cultural resource to be considered eligible for listing in the CRHR and, therefore, a historical resource. Historical resources are defined in PRC Section 5020.1(j). In 2014, Assembly Bill 52 (AB 52) added the term "tribal cultural resources" to CEQA, and AB 52 is commonly referenced instead of CEQA when discussing the process to identify tribal cultural resources (as well as identifying measures to avoid, preserve, or mitigate effects to them). Defined in PRC Section 21074(a), a tribal cultural resource is a CRHR or local register eligible site, feature, place, cultural landscape, or object which has a cultural value to a California Native American tribe. Tribal cultural resources must also meet the definition of a historical resource. Unique archaeological resources are referenced in PRC Section 21083.2.

PRC Section 5024 requires state agencies to identify and protect state-owned historical resources that meet the NRHP listing criteria. It further requires the Department to inventory state-owned structures in its rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer (SHPO) before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the NRHP or are registered or eligible for registration as California Historical Landmarks. Procedures for compliance with PRC Section 5024 are outlined in a Memorandum of Understanding (MOU)[1] between the Department and SHPO, effective January 1, 2015. For most Federal-aid projects on the State Highway System, compliance with the Section 106 PA will satisfy the requirements of PRC Section 5024.

Affected Environment

This section is based on the studies performed to identify and evaluate the potential for the project's effects on cultural resources, including the Historical Properties Survey Report (HPSR), an Archaeological Survey Report (ASR), and an Historical Resource Evaluation Report (HRER), all completed in November 2020.

Methods used to support the studies for the analysis include records searches, field surveys including Phase I pedestrian surveys and Extended Phase I testing, field testing and Native American consultation with the United Auburn Indian Community and Colfax-Todds.

The Area of Potential Effects (APE) is the area studied for the cultural resources present in the general project area and which may extend beyond the boundary of the project study area. The APE is defined to avoid impacts to cultural resources when feasible, and where avoidance did not conflict with the purpose and need of the proposed project. The APE aligns with the cultural resource study area and project study area. It consists of a broad corridor that encompasses existing and proposed new right-of-way (ROW) as well as lands that may be used during construction but not included in the final ROW.

In accordance with Section 106 PA Stipulation VIII.A, the Area of Potential Effects (APE) for the project was established by Caltrans District 3 staff on November 5, 2020.

Cultural resources identified within the APE include several built-environment resources that were evaluated as a result of this project and are not eligible for inclusion in the National Register of Historic Places (NRHP), Section 106 Programmatic Agreement Stipulation

[1] The MOU is located on the SER at https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/5024mou-15-a11y.pdf

VIII.C.6. Caltrans received concurrence on this determination from the State Historic Preservation Officer (SHPO) in a letter dated January 13, 2021.

One archaeological site is within the APE, a Native American bedrock mortar which is considered eligible for inclusion in the NRHP for the purpose of this project; this is only because the feature/artifact will be protected in their entirety from any potential effects through the establishment of an Environmentally Sensitive Area (ESA), in accordance with Section 106 PA Stipulation VIII.C.3.

Environmental Consequences

Within the project APE, there is one cultural resource that is assumed eligible for inclusion to the National Register of Historic Places. However, the Extended Phase I excavations confirmed the site does not extend into the projects Area of Direct Impact (ADI) and thus will be avoided and protected in its entirety through the establishment of an ESA. Thus, the project has a finding of "no adverse effect with standard conditions".

There are historic properties protected by Section 4(f) of the Department of Transportation Act of 1966 within the project vicinity. However, this project will not "use" those properties as defined by Section 4(f). Please see Appendix A "Resources Evaluated Relative to the Requirements of Section 4(f)" for additional details.

Avoidance, Minimization, and/or Mitigation Measures

CUL-1: Discovery of Unanticipated Cultural Resources
If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, California Health and Safety Code (H&SC) Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. If the remains are thought by the coroner to be Native American, the coroner will notify the Native American Heritage Commission (NAHC), who, pursuant to PRC Section 5097.98, will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact Erin Dwyer, Caltrans District 3 Environmental Branch Manager, so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

CUL-2: Environmentally Sensitive Areas

Use of high visibility fencing will be used to establish an ESA to protect the cultural resource in its entirety.

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

Regulatory Setting

Executive Order (EO) 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration (FHWA) requirements for compliance are outlined in 23 Code of Federal Regulations (CFR) 650 Subpart A.

To comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments.
- Risks of the action.
- Impacts on natural and beneficial floodplain values.
- Support of incompatible floodplain development.
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values affected by the project.

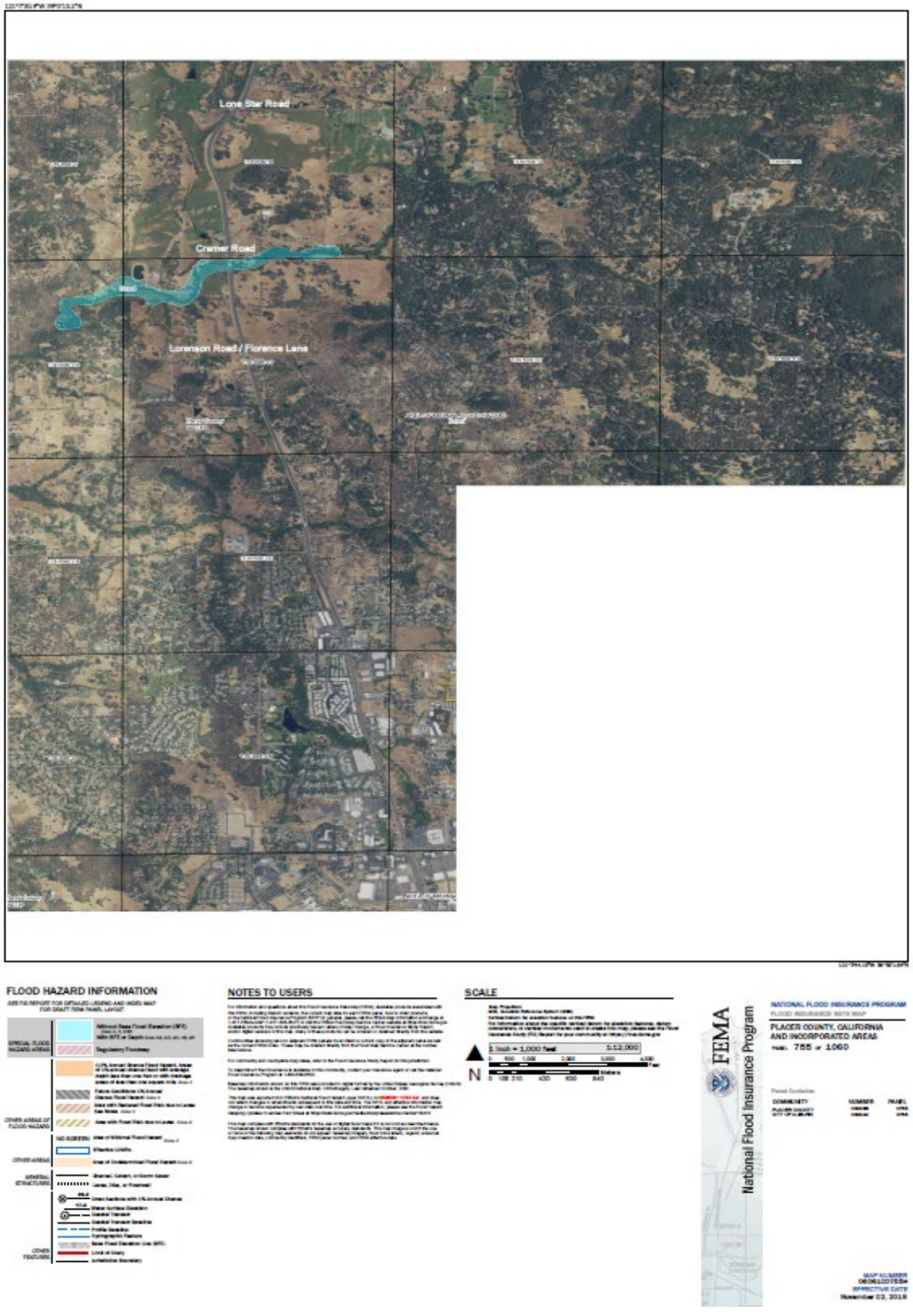
The base floodplain is defined as "the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year." An encroachment is defined as "an action within the limits of the base floodplain."

Affected Environment

The project is located within the mother-lode region of the Sierra Nevada Mountain Foothills and is within the jurisdiction of the Central Valley Regional Water Quality Control Board. The project area is within the Coon Creek Watershed (hydrologic unit code [HUC] 10201610201). The average annual precipitation within the Coon Creek watershed is approximately 33.97 inches . The terrain, within the project area and vicinity, is generally characterized by grassy rolling hills, naturally clumped native oak trees, manmade roadside slopes covered with native or naturalized grasslands, with elevations ranging from approximately 1300 to 1400 feet above mean sea level.

The project area, at Post Mile 9.45, North Fork Dry Creek (also known as Orr Creek) is within flood zone A, a Federal Emergency Management Agency (FEMA) 100-year floodplain, as depicted on Flood Insurance Rate Maps (FIRMs) (Figure 6). The North Fork Dry Creek (also known as Orr Creek) is within a Special Flood Hazard Area (SFHA) Zone A, which represents areas subject to inundation by the 100-year storm event, however, base flood depths and elevations are not determined for SFHA Zone A areas.

Figure 6. FEMA Flood Zone Map



Environmental Consequences

No Build Alternative

The No Build Alternative would not change hydrology in the project area.

Build Alternatives

Environmental consequences for the three alternatives are similar, and therefore discussed together. The project would construct inside shoulders (minimum width of 5-feet) and construct roadside ditches, which will incorporate side slopes of 2:1 or less. The total length of the project is 1.9 miles. Cross culverts for intersecting street drainage culverts and driveways would be evaluated and replaced as necessary to provide improved drainage capacity along the northbound and southbound highway shoulder drainage ditches. Existing driveways would be modified to conform to the highway, as needed. As a result, driveway culverts would be replaced to convey drainage flows in the roadside ditches. Existing cross culverts would also be extended or replaced, as needed. In addition, there will be minor shifts in the horizontal alignment and minor adjustments in vertical profile to correct existing non-standard features.

The proposed project would likely exceed one acre of new impervious area. With new impervious surfaces, post-project flows will exceed/increase pre-project flows and could result in downstream erosion or flooding. In addition, increased impervious surfaces could reduce the ability for groundwater recharge within the localized groundwater aquifer system. However, to address the additional flows and ensure that the proposed project does not exceed existing flow conditions, the project will include stormwater runoff best management practices (BMPs) to collect and retain or detain the additional flows within the project limits, as required by the California Department of Transportation National Pollution Discharge Elimination System municipal separate storm sewer systems (MS4) permit and a Storm Water Management Plan. In addition, the proposed project will only minimally affect groundwater resources because the excavations would occur on a temporary, short-term basis during the construction period. The proposed project would not infringe upon the existing floodplain or result in a significant encroachment in the 100-year floodplain.

Avoidance, Minimization, and/or Mitigation Measures

This Floodplain Hydraulics Study has determined that North Fork Dry Creek does not overtop the roadway in the 100-year storm event, and the Project will not infringe upon the existing floodplain because of construction of the proposed center concrete median. No additional measures are proposed.

2.2.2 WATER QUALITY AND STORM WATER RUNOFF

Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source[2] unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA). Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. The following are important CWA sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.

- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).

- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCBs) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).

- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

The goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

The USACE issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of the USACE's Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency's (U.S. EPA) Section 404 (b)(1) Guidelines (40 Code of Federal Regulations [CFR] Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there

[2] A point source is any discrete conveyance such as a pipe or a man-made ditch.

is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent[3] standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the CWA and regulates discharges to waters of the state. Waters of the state include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined, and this definition is broader than the CWA definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA and regulating discharges to ensure compliance with the water quality standards. Details about water quality standards in a project area are included in the applicable RWQCB Basin Plan. In California, RWQCBs designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect those uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (NPDES permits or WDRs), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

[3] The U.S. EPA defines "effluent" as "wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall."

- **National Pollutant Discharge Elimination System (NPDES) Program**

  Municipal Separate Storm Sewer Systems (MS4)

  Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems (MS4s). An MS4 is defined as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water." The SWRCB has identified the Department as an owner/operator of an MS4 under federal regulations. The Department's MS4 permit covers all Department rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

  The Department's MS4 Permit, Order No. 2012-0011-DWQ (adopted on September 19, 2012 and effective on July 1, 2013), as amended by Order No. 2014-0006-EXEC (effective January 17, 2014), Order No. 2014-0077-DWQ (effective May 20, 2014) and Order No. 2015-0036-EXEC (conformed and effective April 7, 2015) has three basic requirements:

  1. The Department must comply with the requirements of the Construction General Permit (see below);

  2. The Department must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and

  3. The Department storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the maximum extent practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

  To comply with the permit, the Department developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within the Department for implementing storm water management procedures and practices as well as training, public education, and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices the Department uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

  Construction General Permit

  Construction General Permit, Order No. 2009-0009-DWQ (adopted on September 2, 2009 and effective on July 1, 2010), as amended by Order No. 2010-0014-DWQ (effective February 14, 2011) and Order No. 2012-0006-DWQ (effective on July 17, 2012). The permit regulates storm water discharges from construction sites that result in

a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop Storm Water Pollution Prevention Plans (SWPPPs); to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective SWPPP. In accordance with the Department's SWMP and Standard Specifications, a Water Pollution Control Program (WPCP) is necessary for projects with DSA less than one acre.

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the U.S. must obtain a 401 Certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by the USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before the USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as WDRs under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

Affected Environment

The initial Water Quality Assessment (WQA) was completed on September 2, 2020 and was updated on September 21,2020 to include the updated alternatives.

The project is within the Coon Creek watershed (HUC 190201610201) and this segment of SR-49, within the project area, crosses two drainages, Lone Star Canal and Orr Creek.

This project segment is within Placer County's Urban MS4 Permit boundary. and per The Department is expected to comply with the lawful requirements of municipalities and other local, regional, and/or other State agencies regarding discharges of storm water to separate storm sewer systems or other watercourses under the agencies' jurisdictions.

This segment also lies within a high-risk receiving watershed boundary. High risk receiving watersheds are watersheds that drain to water bodies that are either listed on the CWA 303(d) List for sedimentation/siltation or turbidity, have a USEPA-approved Total Maximum Daily Load Implementation Plan for sediment; or have beneficial uses of Cold, Spawn, and Migratory. A project that meets at least one of the three criteria has a high receiving water risk.

Environmental Consequences

The discharge of storm water runoff from construction sites has the potential to affect water quality standards, water quality objectives and beneficial uses. Potential pollutants and sources are sediment; non-storm water (groundwater, waters from cofferdams, dewatering, water diversions) discharges; from vehicle and equipment cleaning agents, fueling, and maintenance; from waste materials and materials handling and storage activities.

A Storm Water Data Report (SWDR) has not yet been prepared for this project as it will require a more developed design. As a result, recommendations for Design Pollution Prevention and Construction Site Best Management Practices (BMPs) are unknown. However, the BMPs that are typically implemented and common for projects having similar scopes of work and field operations include (but are not limited to) the following: concrete washouts and bins, drainage inlet protection, plastic covering, straw wattles, silt fencing, waste management and disposal bins, stabilized construction vehicle ingress and egress points, vacuum trucks, and pavement sweepers.

Avoidance, Minimization, and/or Mitigation Measures

The following are recommendations to avoid water quality impacts and ensure NPDES permit compliance for the duration of the project:

1. The project shall adhere to the conditions of the Caltrans a Statewide National Pollutant Discharge Elimination System (NPDES) Permit (Permit) (Order No. 2012-0011-DWQ, NPDES Permit No. CAS000003) on September 19, 2012. This statewide permit regulates storm water and non-storm water discharges from Caltrans' properties and facilities, and discharges associated with operation and maintenance of the State highway system. Caltrans facilities include, but are not limited to, maintenance stations/yards, equipment storage areas, storage facilities, fleet vehicle parking and maintenance areas and warehouses with material storage areas.
2. Adherence to the requirements of the Statewide NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002), and all adopted amendments to this General Permit; for discharge of pollutants to waters of the United States, from construction sites that disturb one or more acres of land surface or is part of a larger common plan of development or sale that disturbs more than one acre of land surface.
3. The discharge of storm water runoff from construction sites has the potential to affect water quality standards, water quality objectives and beneficial uses. Potential pollutants and sources are sediment; non-storm water (groundwater, waters from cofferdams, dewatering, water diversions) discharges; from vehicle and equipment cleaning agents, fueling, and maintenance; from waste materials and materials handling and storage activities.

4. Adherence to the following is recommended to prevent receiving water pollution as a result of construction activities and/or operations from this project:
    a) Follow all applicable guidelines and requirements in the 2018 Caltrans Standard Specifications (2018 CSS), Section 13, regarding water pollution control and general specifications for preventing, controlling, and abating water pollution to Department owned Municipal Separate Storm Sewer Systems (MS4s), streams, waterways, and other bodies of water.
    b) The Contractor prepared Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Program (WPCP) shall incorporate appropriate temporary Construction Site BMPs to implement effective handling, storage, use and disposal practices during construction activities.
    c) Focus and attention during construction should be given to 2018 CSS, Section 13-4 (Job Site Management), to control potential sources of water pollution before it encounters any MS4 or watercourse. It requires the Contractor to implement spill prevention and controls; materials, waste and non-storm management controls; and manage dewatering activities at the construction site.
    d) Existing drainage facilities should be identified and protected by the application of appropriate temporary Construction Site BMPs.
    e) If and where applicable, shoulder backing areas should be stabilized by Temporary Construction Site BMPs, or rolled and compacted in place, by the end of each day and prior to the onset of precipitation.
5. The Caltrans' Storm Water Management Plan (SWMP), the Project Planning and Design Guide (PPDG) Section 4, and the Evaluation Documentation Form (EDF) provide detailed guidance in determining if a specific project requires the consideration of permanent Treatment BMPs. Using these tools, general purpose BMPs will be selected by the Design Engineer (per Caltrans' PPDG) and described in the project SWDR.
6. If groundwater dewatering is anticipated, a separate permit may be required. Coordinate with the District NPDES Coordinator prior to the PS&E phase for direction and guidance.
7. If a batch plant is considered within the State's ROW, it will require a separate permit (Industrial General Permit) and involve coordination with Caltrans Construction field staff and the main Contractor for the project.

2.2.3 PALEONTOLOGY

Regulatory Setting

Paleontology is a natural science focused on the study of ancient animal and plant life as it is preserved in the geologic record as fossils.

A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects.

16 United States Code (USC) 431-433 (the "Antiquities Act") prohibits appropriating, excavating, injuring, or destroying any object of antiquity situated on federal land without the permission of the Secretary of the Department of Government having jurisdiction over the land. Fossils are considered "objects of antiquity" by the Bureau

of Land Management, the National Park Service, the Forest Service, and other federal agencies.

16 United States Code (USC) 461-467 established the National Natural Landmarks (NNL) program. Under this program property owners agree to protect biological and geological resources such as paleontological features. Federal agencies and their agents must consider the existence and location of designated NNLs, and of areas found to meet the criteria for national significance, in assessing the effects of their activities on the environment under NEPA.

16 United States Code (USC) 470aaa (the Paleontological Resources Preservation Act) prohibits the excavation, removal, or damage of any paleontological resources located on federal land under the jurisdiction of the Secretaries of the Interior or Agriculture without first obtaining an appropriate permit. The statute establishes criminal and civil penalties for fossil theft and vandalism on federal lands.

23 United States Code (USC) 1.9(a) requires that the use of Federal-aid funds must be in conformity with all federal and state laws.

23 United States Code (USC) 305 authorizes the appropriation and use of federal highway funds for paleontological salvage as necessary by the highway department of any state, in compliance with 16 USC 431-433 above and state law.

Under California law, paleontological resources are protected by the California Environmental Quality Act (CEQA).

Affected Environment

This section is based on the Paleontological Identification Report (PIR) prepared on September 10, 2020.

The project area is in North Auburn, CA, approximately 30 miles NE of Sacramento, CA, on the western boundary of the Sierra Nevada geomorphic province and the eastern edge of the Great Valley geomorphic province. The project area is included within the Preliminary Geologic Map of the Sacramento 30' x 60' Quadrangle, California (Gutierrez 2011) and identified as overlying Jurassic metavolcanics rocks of the Foothill Melange. This was supported by earlier mapping of the Sacramento Quadrangle by Wagner et al (1981). A finer-scaled map by Bartow and Helley (1979) failed to identify the geologic units underlying the project area (likely due to their Jurassic age), however known fossil-bearing Tertiary formations (i.e. Mehrten, Laguna, Turlock and Ione) were positively identified outside of the footprint of the proposed project.

Searches of the University of California, Berkeley, Museum of Paleontology records database resulted in no know previous fossil discoveries in or near the proposed project footprint, however fossils have been recovered within Placer County in the Ione, Calaveras, Chico, Mariposa, Sailor Canyon and Shoo Fly and Division A formations. None of these geologic formations occur within the proposed project footprint.

Due to the topographic setting of the proposed project, within a low-lying basin in between two mountain ranges, the surficial geology is likely Quaternary alluvium, underlain by metavolcanics as identified in the mapping referenced above. Metavolcanic rocks as a class

are unlikely to contain significant fossil resources, and Quaternary alluvium is generally too young to contain fossils. No previous discoveries of fossils within Quaternary alluvium are known in or near the project limits.

Environmental Consequences

No Build Alternative

Under the no build alternative, there would be no impacts to paleontological resources because no construction would occur.

Build Alternatives

Impacts to paleontological resources generally occur during excavations and other ground-disturbing activities. Since the existing facility is assumed to be built on imported fill material, activities related to grinding, pulverizing, excavating, and paving within the existing paved portion of the project area have low to no potential to affect significant paleontological resources. Existing roadside ditches will most likely be graded and filled with imported material to build the proposed wider shoulders at the existing highway elevation. There is a low to moderate potential for these activities to impact paleontological resources in these areas as depth of excavation will be between 1–3 feet. Newly acquired right-of-way will be cleared of vegetation and graded or excavated. The majority of new right-of-way would be acquired from actively-managed farmland.

Avoidance, Minimization, and/or Mitigation Measures

Because ground disturbance during construction activities could disturb paleontological resources, the following mitigation measures would be implemented.

PALEO-1: Implement Construction Training

Prior to the start of grading or excavation activities into any non-fill soils in the project vicinity (specifically the Modesto and Riverbank formations), construction personnel involved with earth-moving activities (including the Caltrans Resident Engineer or site superintendent) shall be informed of the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction activities, and proper notification procedures should fossils be encountered. This training must be prepared and delivered by a qualified paleontologist or archaeologist.

PALEO-2: Stop Work if Paleontological Resources are Discovered

If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find and notify the appropriate Caltrans personnel as defined in the project specifications. Ground-disturbing activities in the vicinity of the find cannot begin again until approved by a qualified paleontologist. Vicinity of work stoppage is at the professional discretion of the qualified paleontologist and will be determined in consultation with the Caltrans resident engineer.

PALEO-3: Prepare Mitigation Plan if Resources are Discovered

If paleontological resources are discovered during earthmoving activities, a qualified paleontologist will be required to evaluate the resource and prepare a mitigation plan in

accordance with Caltrans guidelines. The plan may include items including, but not limited to, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen removed, and a report of findings. To avoid construction delays it is recommended that the mitigation plan and mitigation procedures be developed prior to beginning construction. To avoid potential impacts to the project schedule, it is also recommended that right-of-way acquisition includes language that designates Caltrans as the sole owner of any paleontological resources discovered; otherwise the underlaying landowner(s) would need to be consulted for handling, ownership and possible curation of fossils found on their property.

2.2.4 HAZARDOUS WASTE/MATERIALS

Regulatory Setting

Hazardous materials, including hazardous substances and wastes, are regulated by many state and federal laws. Statutes govern the generation, treatment, storage and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health, and land use.

The primary federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, and the Resource Conservation and Recovery Act (RCRA) of 1976. The purpose of CERCLA, often referred to as "Superfund," is to identify and cleanup abandoned contaminated sites so that public health and welfare are not compromised. The RCRA provides for "cradle to grave" regulation of hazardous waste generated by operating entities. Other federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

In addition to the acts listed above, Executive Order (EO) 12088, *Federal Compliance with Pollution Control Standards*, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the CA Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and cleanup of contamination include Title 22 Division 4.5 Environmental Health

Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is found, disturbed, or generated during project construction.

Affected Environment

The Initial Site Assessment (ISA) was completed on July 21, 2020 and was updated on March 25, 2021.

The purpose of the ISA was to identify any hazardous waste issues within and adjacent to the project area that could affect the project's design, constructability, feasibility, and/or cost. A records search of federal, state, and local databases, review of maps and reports, and a field inspection were conducted as well.

Naturally Occurring Asbestos

A geologic evaluation regarding Naturally Occurring Asbestos (NOA) was conducted within the project limits. This evaluation included a review of geologic maps and reports including data prepared by the California Geological Survey (CGS) and the United States Geological Survey (USGS), previous studies conducted by Caltrans and their consultants, and a field inspection of the geology in the project area. The evaluation **does not** indicate the presence of altered ultramafic bedrock, alluvium derived from ultramafic rock, or other rock commonly associated with NOA.

Cortese List

The Cortese List is a compilation of contaminated sites identified by the State of California-State Water Resource Control Board; active, closed, and inactive landfills identified by the Integrated Waste Management Board; and potentially hazardous waste sites identified by the Department of Toxic Substance Control. This list was reviewed as part of the initial screening for this project. The list, or a property's presence on the list, has bearing on the local permitting process as well as on compliance with the California Environmental Quality Act (CEQA). The proposed project **is not** within or impacting any site on the Cortese List.

Lead in Soil

Aerially deposited lead (ADL) from the historical use of leaded gasoline, exists along roadways throughout California. If encountered, soil with elevated concentrations of lead as a result of ADL on the state highway system right-of-way within the limits of the project will be managed under the July 1, 2016, ADL Agreement between Caltrans and the California Department of Toxic Substances Control. This ADL Agreement allows such soils to be safely reused within the project limits as long as all requirements of the ADL Agreement are met.

Thermoplastic/Paint Stripe/Pavement Markings

SR 49 has thermoplastic paint and/or pavement markings. Thermoplastic striping and markings may contain elevated concentrations of lead chromate and hexavalent chromium manufactured before 2005 and painted markings manufactured before 1997.

Treated Wood Waste

Treated wood waste (TWW) is wood with preservative chemicals that protect it from insect attack and fungal decay during use. Typical uses in the highway environment include signposts, metal beam guardrail wood posts, and lagging on retaining walls. The chemical preservatives used are hazardous and post a risk to human health and the environment. Arsenic, chromium, copper, creosote and pentachlorophenol are among the chemicals used. These chemicals are known to be toxic or carcinogenic. Harmful exposure to these chemicals may result from dermal contact with TWW from inhalation or ingestion of TWW particulate (e.g., sawdust and smoke) as this material is handled.

Environmental Consequences

No Build Alternative

No construction would take place under the No-Build Alternative; therefore, there would be no potential to expose workers or nearby land uses to soil contamination or hazardous materials from construction activities. The No-Build Alternative would not result in right-of-way acquisition or construction disturbance. Accordingly, the No-Build Alternative would not result in any direct effects regarding hazardous wastes or materials.

Build Alternatives

Humans and the environment could be exposed to hazardous conditions from the accidental release of hazardous materials during construction activities. Construction would involve the use of heavy equipment, involving small quantities of hazardous materials (e.g., petroleum and other chemicals used to operate and maintain construction equipment) that may result in hazardous conditions in the project area.

Disturbing either yellow or white pavement markings by grinding or sandblasting or removal of treated wood posts or guardrails could expose construction workers or the general public to lead chromate and other harmful chemicals unless standard removal protocols are followed. Exposure of construction workers or the general public to these hazardous materials or wastes could pose a possible threat to human health. Soils on agricultural parcels could contain hazardous chemicals from past pesticide/herbicide use. Exposure of construction workers or the general public to these hazardous materials or wastes could pose a possible threat to human health.

Aerially deposited lead (ADL) from the historical use of leaded gasoline, exists along roadways throughout California. Areas of primary concern are soils along routes that have had high vehicle emissions from large traffic volumes or congestion during the time when leaded gasoline was in use (generally prior to 1986). Along roads where the shoulder subgrade has not been disturbed, the presence of ADL is generally limited to the upper 24 inches. Lead concentrations typically drop rapidly with increasing depth below the ground surface. A preliminary Site Investigation (PSI) would be required during the design phase of to determine if lead is present, and what, if any worker protection or materials handling, transportation or disposal restrictions are required.

Avoidance, Minimization, and/or Mitigation Measures

HAZ-1: Avoid and Minimize the Potential for Effects from Hazardous Waste or Materials

The proposed project will disturb soil during construction. As it is possible that aerially deposited lead may be disturbed, a preliminary site investigation (PSI) is required. High levels of lead from historical combustion of leaded fuel is present at several locations near the proposed project limits. A preliminary site investigation (PSI) is required prior to final PS&E to determine if lead is present, and what, if any worker protection or materials handling, transportation or disposal restrictions are required.

Contractors would be required to work under a health and safety plan and soil management plan. These plans would be prepared to address worker safety when working with potentially hazardous materials, including soils potentially containing aerially deposited lead, and other construction-related materials within the project right-of-way. The plans would provide for identification of potential hazardous materials at the work site and for specific actions to avoid worker exposure.

2.2.5 AIR QUALITY

Regulatory Setting

The Federal Clean Air Act (FCAA), as amended, is the primary federal law that governs air quality while the California Clean Air Act (CCAA) is its companion state law. These laws, and related regulations by the United States Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (ARB), set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards have been established for six criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM) —which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$), Lead (Pb), and sulfur dioxide (SO_2). In addition, state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride. The NAAQS and state standards are set at levels that protect public health with a margin of safety, and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act (NEPA). In addition to this environmental analysis, a parallel “Conformity” requirement under the FCAA also applies.

Conformity
The conformity requirement is based on FCAA Section 176(c), which prohibits the U.S. Department of Transportation (USDOT) and other federal agencies from funding, authorizing, or approving plans, programs, or projects that do not conform to State Implementation Plan (SIP) for attaining the NAAQS. “Transportation Conformity” applies to highway and transit projects and takes place on two levels: the regional (or planning and programming) level and the project level. The proposed project must conform at both levels to be approved.

Conformity requirements apply only in nonattainment and “maintenance” (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. U.S. EPA regulations at 40 Code of Federal Regulations (CFR) 93 govern the

conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for NAAQS and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and in some areas (although not in California), sulfur dioxide (SO_2). California has nonattainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, and also has a nonattainment area for lead (Pb); however, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (FTIPs) that include all transportation projects planned for a region over a period of at least 20 years (for the RTP) and 4 years (for the FTIP). RTP and FTIP conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the FCAA and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), Federal Highway Administration (FHWA), and Federal Transit Administration (FTA) make the determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the FCAA. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept and scope and the "open-to-traffic" schedule of a proposed transportation project are the same as described in the RTP and FTIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Project-level conformity is achieved by demonstrating that the project comes from a conforming RTP and TIP; the project has a design concept and scope[4] that has not changed significantly from those in the RTP and TIP; project analyses have used the latest planning assumptions and EPA-approved emissions models; and in PM areas, the project complies with any control measures in the SIP. Furthermore, additional analyses (known as hot-spot analyses) may be required for projects located in CO and PM nonattainment or maintenance areas to examine localized air quality impacts.

Affected Environment

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Location Climate and Meteorology

Meteorology (weather) and terrain can influence air quality. Certain weather parameters are highly correlated to air quality, including temperature, the amount of sunlight, and the type of winds at the surface and above the surface. Winds can transport ozone and ozone precursors from one region to another, contributing to air quality problems downwind of source regions. Furthermore, mountains can act as a barrier that prevents ozone from dispersing.

The Auburn Municipal Airport climatological station (AUN) in Placer County is located near the project site and is representative of meteorological conditions near the project. The

[4] "Design concept" means the type of facility that is proposed, such as a freeway or arterial highway. "Design scope" refers to those aspects of the project that would clearly affect capacity and thus any regional emissions analysis, such as the number of lanes and the length of the project.

prevailing wind direction over the county is westerly. The proposed project is located within Western Placer County in the SVAB, which is relatively flat and bordered by mountains to the east, west, and north. The basin has a Mediterranean climate characterized by hot, dry summers and cool, rainy winters, sometimes with periods of dense and persistent low-level fog that are most prevalent between winter storms. The extreme summer aridity of the Mediterranean climate is caused by sinking air of subtropical high-pressure regions. In the Sacramento Valley, the ocean has less influence than in the coastal areas, giving the interior Mediterranean climate more seasonal temperature variation.

The area covers the transition from the low elevations of the Sacramento Valley to the Sierra Nevada foothills, with a corresponding transition in climate. Most precipitation results from air masses that move in from the Pacific Ocean during the winter months, from west or northwest. Rainfall increases as the air mass is pushed upward and cools; therefore, the lower western edge of the area is drier than the higher eastern edge. The normal annual precipitation, which occurs primarily from November through April, ranges from 18 inches on the west to 36 inches on the east. Temperature is less variable across the area. Winter temperature averages 49°F. During the summer months, average daily temperatures range from 58°F to more than 91°F, and daily high temperatures can exceed 110°F. The inland location and surrounding mountains shelter the area from much of the ocean breezes or morning cloud cover that moderate coastal temperature. The predominant wind direction and speed is from the south-southwest at 10 miles per hour. The Plan Area has nearly 250 sunny days per year. The heat and summer sun, and typically less than 1 inch of rainfall from May to August, cause rapid drying of open water. The climate, coupled with the extensive hardpan underlying Valley soils, creates the vernal pool condition. When rain fills the pools in the winter and spring, the water collects and remains in the depressions. In the springtime, the water gradually evaporates until the pools become completely dry in the summer and fall.

Existing Air Quality Conditions

Existing air quality conditions in the project area can be characterized in terms of the ambient air quality standards that federal and state governments have established for various pollutants by monitoring data collected in the region. The nearest air quality monitoring station in the vicinity of the project area that reported pollutant concentrations between 2017 and 2019 is the Auburn-Atwood Rd Air Monitoring Station, which is approximately 3 miles south of the proposed project. Air quality standards are summarized below in Table 11.

As shown in Table 11, levels of ozone exceeded both the state and federal 8-hour standard concentrations for the period from 2017 to 2019. Levels of PM10 exceeded the state highest 24-hr standard in 2019 and the national highest 24-hr standard in 2018. Federal maximum 24-hour concentrations of PM2.5 exceeded the standard concentration (35 µg/m3) in 2018.

Table 11. Air Quality Concentrations for the Past 3 Years Measured at Auburn-Atwood Road

Pollutant	Standard	2017	2018	2019
Ozone				
Highest 8-hr concentration (ppm): State		0.084	0.116	0.081
Federal		0.084	0.115	0.081
No. days exceeded: State	0.070 ppm	30	36	9
Federal	0.070 ppm	28	35	9
*PM_{10}**				
Highest 24-hr concentration (µg/m3): State		65.8	211.3	63.1
Federal		66.0	202.2	61.3
No. days exceeded: State	50 µg/m3	**	**	2.0
Federal	150 µg/m3	0	2.0	0
Annual average concentration (µg/m3): State		**	**	15.4
Federal		16.4	22.8	15.1
$PM_{2.5}$				
Max 24-hr concentration (µg/m3): State		29.7	91.1	21.1
Federal		29.7	91.1	21.1
No. days exceeded: Federal	35 µg/m3	0	11.6	0
Annual average concentration (µg/m3): State		5.6	8.5	7.1
Federal		5.6	8.5	7.1

Source: California Air Resources Board (http://www.arb.ca.gov/adam) and accessed 12/20/2020
*PM10 data in the Roseville-N Sunrise Blvd Air Monitoring station.
**means there was insufficient data available to determine the value.

Attainment Status

Areas that do not violate ambient air quality standards are considered to have attained the standard. Violations of ambient air quality standards are based on air pollutant monitoring data and are evaluated for each air pollutant. Table 12 lists the state and federal attainment status for all regulated pollutants. At the federal level, Western Placer County is classified as unclassified/attainment for CO, NO2, SO2, and Pb, nonattainment for 8-Hour O3 and PM2.5, and unclassified for PM10. At the state level, Western Placer County is classified as nonattainment for O3 and PM10, attainment for PM2.5, CO, NO2, SO2, Pb, and sulfates, and unclassified for visibility-reducing particles, and hydrogen sulfide.

Sensitive Receptors

Sensitive receptors can include residential areas, schools, hospitals, other health care facilities, child/day care facilities, parks, and playgrounds. Based on research indicating the zone of greatest concern near roadways is within 500 feet (or 150 meters), sensitive receptors (residential areas) within 500 feet (or 150 meters) have been identified. Figure 7 shows the locations of receptors relative to the proposed project site, which are all private residences.

Figure 7. Receptors Located Near the Proposed Project

Table 12. State and Federal Criteria Air Pollutant Effects and Sources

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Ozone (O_3)	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic VOC may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (ROG or VOC) and nitrogen oxides (NOx) in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.
Carbon Monoxide (CO)	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone. Colorless, odorless.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.
Respirable Particulate Matter (PM_{10})	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many toxic & other aerosol and solid compounds are part of PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke & vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.
Fine Particulate Matter ($PM_{2.5}$)	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the $PM_{2.5}$ size range. Many toxic &other aerosol and solid compounds are part of $PM_{2.5}$	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical reactions involving other pollutants including NOx, sulfur oxides (SOx), ammonia, and ROG.
Nitrogen Dioxide (NO_2)	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain & nitrate contamination of stormwater. Part of the "NOx" group of ozone precursors.	Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.
Sulfur Dioxide (SO_2)	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.
Lead (Pb)	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also, a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads.
Sulfates	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Hydrogen Sulfide (H_2S)	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea. Strong odor.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.
Visibility Reducing Particles (VRP)	Reduces visibility. Produces haze. NOTE: not directly related to the Regional Haze program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in National Parks and other "Class I" areas. However, some issues and measurement methods are similar.	See particulate matter above. May be related more to aerosols than to solid particles.
Vinyl Chloride	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes

Environmental Consequences

Regional Conformity

This project is exempt from regional (40 CFR 93.127) conformity requirements. Separate listing of the project in the Regional Transportation Plan and Transportation Improvement Program, and their regional conformity analyses, is not necessary. The project will not interfere with timely implementation of Transportation Control Measures identified in the applicable SIP and regional conformity analysis. Therefore, this project does not require regional conformity, since it is not a regionally significant project analyses that is on facility which serves regional transportation needs and would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel (40 CFR §93.101).

Project Level Conformity

The proposed project does not require a project-level PM hot spot analysis, since it is exempt from all air quality conformity analysis requirements per 40 CFR 93.126, Table 2 in subsection "Safety" (See Appendix C). Therefore, the interagency consultation process for the project-level PM hot spot analysis does not apply.

Additional Environmental Analysis

Operational Emissions

Operational emissions examine long-term changes in emissions due to the project (excluding the construction phase). The operational emissions analysis compares forecasted emissions for existing/baseline, no-build, and build alternatives.

Table 13 below contains a summary of all long-term operational emissions associated with the proposed project. CO and NOx emissions from the traffic operation during the opening (2024) and the design (2044) years would not change between no-build and build alternatives. The emissions of CO and NOx in the future build and no-build alternatives would be lower than those in the existing condition.

Table 13. Summary of Comparative Emissions Analysis

Scenario/ Analysis Year	Direction	ROG (US tons/day)	CO* (US tons/day)	PM10* (US tons/day)	PM2.5* (US tons/day)	NOx* (surrogate for NO2) (US tons/day)
Existing Conditions/ 2019	NB	0.002	0.030	0.036	0.006	0.011
	SB	0.002	0.030	0.036	0.006	0.011
No-Build Alternatives/ 2024	NB	0.002	0.020	0.037	0.006	0.006
	SB	0.002	0.020	0.037	0.006	0.006
Build Alternatives/ 2024	NB	0.002	0.020	0.037	0.006	0.006
	SB	0.002	0.020	0.037	0.006	0.006
No-Build Alternatives/ 2044	NB	< 0.001	0.015	0.042	0.007	0.003
	SB	< 0.001	0.015	0.043	0.007	0.003
Build Alternatives/ 2044	NB	< 0.001	0.015	0.042	0.007	0.003
	SB	< 0.001	0.015	0.043	0.007	0.003

*Applied adjustment factors

Naturally Occurring Asbestos

Naturally occurring asbestos (NOA) can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. Based on review of the California Geological Survey10, Placer County includes the presence of ultramafic rocks or serpentinite and asbestos occurrences reported in the literature. Based on the review of the map, A General Location Guide for Ulramafic Rocks in California-Areas More Likely to Contain Naturally Occurring Asbestos (California Department of Conservation, Division of Mines and Geology, 2000), ultramafic rocks and serpentinite are mapped within the eastern portion of the project area of Placer County where NOA is expected to occur.

The construction activities proposed by Caltrans may disturb NOA-containing soil/rock units, if present at the site. The California Air Resources Board (CARB) has mitigation practices for construction, grading, quarrying and surface mining operations that may disturb natural occurrences of asbestos as outlined in CCR Title 17, §93105 – Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations (ATCM 93105). NOA potentially poses a health hazard when it becomes an airborne particulate. Mitigation practices can reduce the risk of exposure to asbestos-containing dust. The primary mitigation practice used for controlling exposure to potentially asbestos-containing dust is the implementation of engineering controls including wetting the materials

being disturb. If engineering controls do not adequately control exposure to potentially asbestos-containing dust, the use of personal protective equipment including wearing air purifying respirators with High Efficiency Particulate Air (HEPA) filters is required during construction activities.

Lead

Lead is normally not an air quality issue for transportation projects unless the project involves disturbance of soils containing high levels of aerially deposited lead or painting or modification of structures with lead-based coatings. Any potential Aerially Deposited Lead (ADL) issues will be addressed within the Initial Site Assessment.

Mobile Source Air Toxics

Mobile source air toxics (MSATs) are a subset of the 188 air toxics defined by the Clean Air Act. MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

FHWA released updated guidance in October 2016 (FHWA, 2016) for determining when and how to address MSAT impacts in the NEPA process for transportation projects. FHWA identified three levels of analysis:

- No analysis for exempt projects or projects with no potential for meaningful MSAT effects;
- Qualitative analysis for projects with low potential MSAT effects; and
- Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

Projects with no impacts generally include those that a) qualify as a categorical exclusion under 23 CFR 771.117, b) qualify as exempt under the FCAA conformity rule under 40 CFR 93.126, and c) are not exempt, but have no meaningful impacts on traffic volumes or vehicle mix.

Projects that have low potential MSAT effects are those that serve to improve highway, transit, or freight operations or movement without adding substantial new capacity or creating a facility that is likely to substantially increase emissions. The majority of projects fall into this category.

Projects with high potential MSAT effects include those that:

- Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of Diesel Particulate Matter in a single location; or
- Create new or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,000, or greater, by the design year; and
- Are proposed to be located in proximity to populated areas or, in rural areas, in proximity to concentrations of vulnerable populations (i.e., schools, nursing homes, hospitals).

Based on the ARB Land Use Handbook (Cal/EPA and ARB, 2005), it is generally recommended in California that projects perform an emissions analysis to address CEQA requirements if any of the following criteria are met:

- The project changes capacity or realigns a freeway, or urban road with AADT of 100,000 or more and there are sensitive land uses within 500 feet of the roadway.
- The project changes capacity or realigns a rural road (non-freeway) with AADT of 50,000 or more and there are sensitive land uses within 500 feet of the roadway.

This proposed project proposes to construct roundabouts and median barrier, or install signals at intersections, and is located in proximity to the sensitive receptors However, traffic volumes would not be projected to be in the range of 140,000 to 150,000 for NEPA and 50,000 for CEQA criteria, or greater, by the design year. Therefore, the proposed project can fall into the Category 2 (FHWA, 2016), a project with low potential MSAT effects. As such, a qualitative MSAT analysis for NEPA requirements is appropriate (see Appendix H), and CEQA requirements would not be addressed.

In addition, the modeling results using the latest version of CT-EMFAC2017 to estimate emissions of benzene, 1,3-butadiene, formaldehyde, acrolein, naphthalene, DPM, and POM, show that the estimated MSAT emissions would not be substantial changes between existing, opening, and design years. Table 14 shows MSAT emissions estimated for baseline, no-build, and build alternatives for the opening year (2024) and design year (2044). It is expected there would be no appreciable difference in overall MSAT emissions between the future build and the future no-build alternatives.

Table 14. Summary of Comparative MSAT Emissions (US tons) Analysis

Analysis Year/ Scenario	1,3-butadiene (tons/day)	Acetal-dehyde (tons/day)	Acrolein (tons/day)	Benzene (tons/day)	Diesel PM (tons/day)	Ethyl-benzene (tons/day)	Formal-dehyde (tons/day)	Naph-thalene (tons/day)	Polycyclic Organic Matter (tons/day)
Baseline Year (2019) NB & SB	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Opening Year (2024) No-Build Alternative NB & SB	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Opening Year (2024) Build Alternative NB & SB	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Design Year (2044) No-Build Alternative NB & SB	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Design Year (2044) Build Alternative NB & SB	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001

Construction (Short-term) Impacts

Site preparation and roadway construction will involve grading, removing, or improving existing roadways, installing a traffic sign, and paving roadway surfaces. During construction, short-term degradation of air quality is expected from the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment powered by gasoline and diesel engines are also anticipated and would include CO, NOX, ROGs, directly emitted PM10 and PM2.5, and toxic air contaminants (TACs) such as diesel exhaust particulate matter. Construction activities are expected to increase traffic congestion in the area, resulting in increases in emissions from traffic during the delays. These emissions would be temporary and limited to the immediate area surrounding the construction site.

Under the transportation conformity regulations (40 CFR 93.123(c)(5)), construction-related activities that cause temporary increases in emissions are not required in a hot-spot analysis. These temporary increases in emissions are those that occur only during the construction phase and last five years or less at any individual site. They typically fall into two main categories:

- *Fugitive Dust*: A major emission from construction due to ground disturbance. All air districts and the California Health and Safety Code (Sections 41700-41701) prohibit "visible emissions" exceeding three minutes in one hour – this applies not only to dust but also to engine exhaust. In general, this is interpreted as visible emissions crossing the right-of-way line.
- Sources of fugitive dust include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site may deposit mud on local streets, which could be an additional source of airborne dust after it dries. PM10 emissions may vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM10 emissions depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.
- *Construction equipment emissions*: Diesel exhaust particulate matter is a California-identified toxic air contaminant, and localized issues may exist if diesel-powered construction equipment is operated near sensitive receptors.

Construction emissions were estimated using the latest Caltrans' Model, CAL-CET2020 (version 1.0.1). Construction-related emissions for the proposed project are presented in Tables 15, 16, and 17 (Construction Emissions Alternatives 1, 2, and 3, respectively). The emissions presented are based on the best information available at the time of calculations. The emissions represent the construction emissions generated by operation.

Table 15. Construction Emissions (Alternative 1)

Phases / Emissions	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO (tons)	NO_x (tons)	ROGs (tons)	CO_2 (tons)
Land Clearing/Grubbing	0.000	0.000	0.000	0.000	0.000	0
Roadway Excavation/Removal	0.178	0.093	1.027	1.155	0.163	242
Structural Excavation/Removal	0.000	0.000	0.000	0.000	0.000	0
Base/Subbase/Imported Borrow	0.129	0.045	0.465	0.480	0.068	98
Structure Concrete	0.000	0.000	0.000	0.000	0.000	0
Paving	0.037	0.036	0.213	0.524	0.068	101
Drainage/Environment/Landscaping	0.001	0.001	0.004	0.010	0.002	2
Traffic Signalization/Signage/Striping/Painting	0.084	0.082	0.918	1.628	0.182	581
Other Operation	0.000	0.000	0.000	0.000	0.000	0
Project Total (tons)	0.428	0.257	2.627	3.797	0.482	1024

Table 16. Construction Emissions (Alternative 2)

Phases / Emissions	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO (tons)	NO_x (tons)	ROGs (tons)	CO_2 (tons)
Land Clearing/Grubbing	0.000	0.000	0.000	0.000	0.000	0
Roadway Excavation/Removal	0.174	0.089	0.978	1.099	0.155	230
Structural Excavation/Removal	0.000	0.000	0.000	0.000	0.000	0
Base/Subbase/Imported Borrow	0.128	0.045	0.457	0.472	0.067	97
Structure Concrete	0.000	0.000	0.000	0.000	0.000	0
Paving	0.037	0.036	0.213	0.526	0.068	101
Drainage/Environment/Landscaping	0.001	0.001	0.004	0.009	0.001	2
Traffic Signalization/Signage/Striping/Painting	0.079	0.078	0.882	1.547	0.173	552
Other Operation	0.000	0.000	0.000	0.000	0.000	0
Project Total (tons)	0.419	0.248	2.535	3.653	0.464	982

Table 17. Construction Emissions (Alternative 3)

Phases / Emissions	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO (tons)	NO_x (tons)	ROGs (tons)	CO_2 (tons)
Land Clearing/Grubbing	0.000	0.000	0.000	0.000	0.000	0
Roadway Excavation/Removal	0.185	0.100	1.111	1.250	0.177	263
Structural Excavation/Removal	0.000	0.000	0.000	0.000	0.000	0
Base/Subbase/Imported Borrow	0.132	0.048	0.502	0.518	0.073	106
Structure Concrete	0.000	0.000	0.000	0.000	0.000	0
Paving	0.040	0.039	0.230	0.567	0.073	109
Drainage/Environment/Landscaping	0.001	0.001	0.005	0.011	0.002	2
Traffic Signalization/Signage/Striping/Painting	0.091	0.089	0.992	1.761	0.197	628
Other Operation	0.000	0.000	0.000	0.000	0.000	0
Project Total (tons)	0.448	0.276	2.841	4.107	0.522	1108

Implementation of the following measures will reduce air quality impacts resulting from construction activities. Please note that although these measures are anticipated to reduce construction-related emissions, these reductions cannot be quantified at this time.

Avoidance, Minimization, and/or Mitigation Measures

AQ-1: Adhere to PCAPCD (Placer County Air Pollution Control District) Guidelines
The PCAPCD Guidelines provide reasonably available control measures for dust emissions. Measures to reduce PM and GHG from construction are recommended to ensure that short-term health impacts to nearby sensitive receptors are avoided. The following techniques shall be implemented to limit the emission and/or airborne transport of fugitive dust from a site when practical, during all phases of construction work:

- Application of water, chemical stabilizers/suppressants, soil stabilizers, or other liquids
- Covering, paving, enclosing, shrouding, compacting, planting, cleaning, or such other measures the Air Pollution Control Officer may approve to accomplish satisfactory results for temporary and/or extended suppression of PM10 emissions

Climate Change

Neither the United States Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration (FHWA) has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. FHWA emphasizes concepts of resilience and sustainability in highway planning, project development, design, operations, and maintenance. Because there have been requirements set forth in California legislation and executive orders on climate change, the issue is addressed in the California Environmental Quality Act (CEQA) chapter of this document. The CEQA analysis may be used to inform the National Environmental Policy Act (NEPA) determination for the project.

2.2.6 ENERGY

Regulatory Setting

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires the identification of all potentially significant impacts to the environment, including energy impacts.

The California Environmental Quality Act (CEQA) Guidelines section 15126.2(b) and Appendix F, Energy Conservation, require an analysis of a project's energy use to determine if the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources.

Affected Environment

An Energy Analysis Report was completed January 2021 for this project.

This project is located within Segment 10 of the Transportation Concept Report, which is 5 miles of 4 lanes of conventional highway/expressway that begins at Bell Road extending to the Placer/Nevada County line. This segment consists of numerous side streets, access points, and signalized intersections and serves as a major arterial for through traffic for Nevada and El Dorado Counties. In addition, it connects to high-volume local roadways that serve commuter traffic from Nevada County and the North Auburn area and the rapidly-growing commercial area along the route.

The baseline year used for analysis is 2019. Table 18 shows the existing (2019) traffic conditions on SR 49 in Placer County from post miles 8.7 to 10.6.

Table 18. Summary of Existing Traffic Conditions

Scenario/ Analysis Year	Location	AADT		% Truck	VMT (mi)	Average Speed During AM Peak Travel (mph)	Average Speed During PM Peak Travel (mph)	Average Speed During Off-Peak Travel (mph)	LOS
		Total	Truck						
Existing Year 2019	Northbound Post miles 8.7 – 10.6	16,880	1,182	7.0	22,060	69.2	69.2	70.0	B
	Southbound Post miles 8.7 – 10.6	16,920	1,185	7.0	22,110	69.5	69.5	70.0	B

Environmental Consequences

The following environmental consequences section describes the methods and results of energy consumption of the proposed project. Analyses in the Energy Analysis Report was conducted using methodology and assumptions that are consistent with the requirements of NEPA and CEQA. A quantitative energy analysis for the capacity-increasing project considers direct but temporary fuel usage during construction as well as the direct operational fuel consumption.

Direct Energy Consumption (Construction)

Site preparation and roadway construction will involve land clearing/grubbing, roadway excavation/ removal, structural excavation/removal, base/subbase/imported borrow, structure concrete, paving, drainage/environment/landscaping, and traffic signalization/signage/stripping/painting. During construction, short-term fuel consumption is expected by various operation. Fuels for construction equipment would be largely powered by gasoline and diesel. Construction activities are expected to increase traffic congestion in the area, resulting in increases in fuel consumption from traffic during the delays. This consumption would be temporary and limited to the immediate area surrounding the construction site.

Short-Term (Construction)

While construction would result in a short-term increase in energy use, construction design features would help conserve energy. The following measures shall be implemented when practical:

- Reduce grades and curvatures in construction of the project.
- Use recycled and energy-efficient building materials, energy-efficient tools and construction equipment, and renewable energy sources in construction and operation of the project.
- Improve operations and maintenance practices by regularly checking and maintaining equipment to ensure its functioning efficiently.
- Optimize start-up time, power-down time, and equipment sequencing.
- Review and emphasize the financial and environmental results of a preventative maintenance program for major systems and components.
- Set goals and a methodology to track and reward improvements.
- Visually inspect insulation on all piping, ducting and equipment for damage (tears, compression, stains, etc.).
- Educate employees about how their behaviors affect energy use.
- Ensure that team members are trained in the importance of energy management and basic energy-saving practices. Hold staff meetings on energy use, costs, objectives, and employee responsibilities.

The basic procedure for analyzing direct energy consumption from construction activities is to obtain fuel consumption projections in gallons from the Caltrans Construction Emission Tool (CAL-CET). Construction energy consumption was estimated using the Caltrans' Model, CAL-CET2020 (version 1.0.1). Construction-related fuel consumption by operation and annual for the proposed project is presented in Tables 19 and 20, respectively. The calculations of the construction energy consumption are included in Appendix A. The energy consumption presented is based on the best information available at the time of calculations. The energy represents the construction fuel consumption.

Table 19. Construction Fuel Consumption by Operation

Project Phases	Diesel Fuel (gal)			Gasoline Fuel (gal)		
	Alternative 1	Alternative 2	Alternative 3	Alternative 1	Alternative 2	Alternative 3
Land Clearing/Grubbing	0	0	0	0	0	0
Roadway Excavation/Removal	20390	19377	22099	10785	10222	11732
Structural Excavation/Removal	0	0	0	0	0	0
Base/Subbase/Imported Borrow	8275	8132	8935	4020	3943	4331
Structure Concrete	0	0	0	0	0	0
Paving	8326	8357	9025	5427	5447	5898
Drainage/Environment/ Landscaping	156	139	176	92	80	109
Traffic Signalization/Signage/ Striping/Painting	46612	44309	50420	44558	42423	48208
Project Total	83759	80313	90655	64883	62115	70278

Table 20. Annual Construction Fuel Consumption

Construction year	Fuel Consumption (gallons)					
	Diesel Fuel (gal)			Gasoline Fuel (gal)		
	Alternative 1	Alternative 2	Alternative 1	Alternative 2	Alternative 1	Alternative 2
2023	67657	80313	73237	49536	62115	53674
2024	16102	0	17418	15347	0	16604
Total	83759	80313	90655	64883	62115	70278

Direct Energy Consumption (Mobile Sources)

The basic procedure for analyzing direct energy consumption from mobile sources was conducted by calculating fuel consumption using CT-EMFAC2017. Operational energy takes into account long-term changes in fuel consumption due to the project that would increase a capacity (excluding the construction phase). The operational fuel consumption analysis compares forecasted consumption for baseline, No-Build, and Build alternatives during existing, opening, and design years. Table 21 below provides a summary of all long-term operational energy consumption associated with the proposed project. Measures of vehicle miles of travel (VMT) for existing, opening, and design years were estimated using fuel consumption, fleet average fuel consumption factor, and the VMT distribution in the speed bin between 5 and 75 mph.

Table 21. Summary of Comparative Fuel Consumption Analysis

Scenario/ Analysis Year	Daily Vehicles Miles of Travel	Vehicle Percentage (%)		Fuel Consumption (gallons/day)	
		Truck	Non-Truck	Diesel	Gasoline
Baseline Year, 2019					
Northbound	22,060	7.0	93.0	185.417	1,220.915
Southbound	22,110	7.0	93.0	185.944	1,224.389
Opening Year, 2024					
No-build Alternative Northbound	22,770	7.0	93.0	190.026	1,066.067
Southbound	22,870	7.0	93.0	190.811	1,070.472
Build Alternatives Northbound	22,770	7.0	93.0	190.026	1,066.067
Southbound	22,880	7.0	93.0	190.811	1,070.472
Design Year, 2044					
No-build Alternative Northbound	25,570	7.1	92.9	187.499	861.663
Southbound	25,870	7.1	92.9	189.567	871.166
Build Alternatives Northbound	25,580	7.1	92.9	187.499	861.663
Southbound	25,940	7.1	92.9	190.027	873.278

Indirect Energy

The proposed project does not include maintenance activities which would result in long-term indirect energy consumption by equipment required to operate and maintain in the roadway. It will construct roundabouts on SR 49 at the intersections of Lorenson Road and Lone Star Road and place a continuous concrete median barrier between the two roundabouts. As such, it is unlikely to increase indirect energy consumption though increased fuel usage.

The proposed project construction would primarily consume diesel and gasoline through operation of heavy-duty construction equipment, material deliveries, and debris hauling. As indicated above, energy use associated with proposed project construction is estimated to result in the short-term consumption of 83,759 gallons for Alternative 1, 80,313 gallons for Alternative 2, and 90,655 gallons for Alternative 3 from diesel-powered equipment. The proposed project is estimated to result in 64,883 gallons for Alternative 1, 62,115 gallons for Alternative 2, and 70,278 gallons for Alternative 3 from gasoline-powered equipment. These represent small demands (approximately diesel: 0.5%; gasoline: 0.03%) on Placer County's diesel and gasoline sales estimates (i.e. 17 million of diesel gallons and 206 million of gasoline gallons in 2018) that would be easily accommodated, and this demand would cease once construction is complete. Moreover, construction-related energy consumption would be temporary and not a permanent new source of energy demand, and demand for fuels would have no noticeable effects on peak or baseline demands for energy. While construction would result in a short-term increase in energy use, construction design features would help conserve energy.

The construction of all alternatives on the highway would not significantly increase vehicle capacity along SR 49 within the proposed project area. The fuel consumption during the

future years would not be significantly changed between no-build and build scenarios, and the differences between the build and the no-build alternatives in 2044 are approximately 0.46 diesel gallon and 2.11 gasoline gallons at the southbound direction.

The overall gasoline fuel consumption from the build alternatives during the future years would decrease in comparison with that from the existing condition due to increases in carpooling, hybrid, and electric cars that would improve the emission factors. To decrease the consumption from diesel fuels, the application of newer and more fuel-efficient truck vehicles would result in an overall lower potential for an increase in the energy consumption. Additionally, the project may offset some of a project's potential energy usage if it includes elements that would reduce VMT, such as transit improvements or providing facilities for pedestrians and bicyclists.

Overall, the project is expected to have minimal impact on travel speed as well as the utilization of hybrid/electric cars, such the proposed project regarding the non-truck portion would not lead to an increase in energy consumption compared with the existing conditions.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures are required.

2.3 Biological Environment

2.3.1 NATURAL COMMUNITIES

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed below in the Threatened and Endangered Species section 2.3.5. Wetlands and other waters are also discussed below 2.3.2.

Affected Environment

Natural Environmental Study (NES) – March 2021

Botanical and habitat assessment surveys were conducted on June 18, 22, and 23, 2020, to identify potential *Rana draytonii* [California red-legged frog (CRLF)] habitat within aquatic features in the Environmental Study Limits (ESL) and within 1-mile radius of the ESL (where accessible). Not all aquatic features were accessible due to private property restrictions. Additional botanical surveys and delineation of aquatic resources will be conducted spring/summer of 2021.

The survey area is in the east-central portion of the Sacramento Valley, in the Sierra Nevada foothills. Floristically, the survey area lies in the northern Sierra Nevada Foothills sub-region of the California Floristic Province (Baldwin et al. 2012). Land uses in the survey area consist of Caltrans' ROW, the surrounding residential areas, and semi-forested rolling hills. The surrounding hills are also used for cattle grazing.

Vegetation and wildlife communities, including wetlands and other waters, are present within the ESL. The natural community vegetation types identified in the ESL are described in the following subsections.

Non-Native Annual Grassland

Grasslands dominated by nonnative annual grasses occur throughout the survey area. Although annual grasses and forbs dominate the grasslands, perennial grass species are also scattered through these grasslands. Nonnative annuals such as soft chess (*Bromus hordaceous*), annual bluegrass (*Poa annua*), and Mediterranean barley (*Hordeum marinum spp. gussoneanum*) are common in these grasslands. The perennial bunchgrasses scattered through the grassland include nonnative species such as orchardgrass (*Dactylis glomerata*) and tall fescue (*Festuca arundinacea*), as well as native perennials such as slender wheatgrass (*Elymus trachycaulus ssp. trachycaulus*), Idaho fescue (*Festuca idahoensis*), and red fescue (*Festuca rubra*).

Oak Woodland

The project area surrounding the ESL is habitat for valley oak (*Quercus lobata*) and blue oaks (*Quercus douglasii*) in clusters, interspersed with grassland. The habitat is interspersed with grey pine (*Pinus sabiniana*), interior live oak (*Quercus wislizenii*), canyon live oak (*Quercus chrysolepis*), and bay laurel (*Laurus nobilis*), which make up a minor component of the woodland. The understory is dominated by non-native annual grassland which occurs under the tree canopy as well as in open habitat throughout the project area.

Although non-native species, including but not limited to, slender wild oat (*Avena barbata*), little quaking grass (*Briza minor*), storksbill/filaree (*Erodium botrys*), Italian ryegrass (*Festuca perennis*), and rabbit's foot grass (*Polypogon monspeliensis*) comprised the majority of cover in the grassland area, native grasses and forbs including fiddleneck (*Amsinckia intermedia*), pipevine (*Aristolochia sp.*), harvest brodiaea (*Brodiaea elegans*), California brome (*Bromus carinatus*), and wild rye (*Elymus glaucus*) are present throughout the project area as well. Shrub-type vegetation such as manzanita (*Arctostaphylos sp.*), California buckeye (*Aesculus californica*), toyon (*Heteromeles sp.*), California coffeeberry (*Rhamnus californica*), Ceanothus (*Ceanothus sp.*), and poison oak (*Toxicodendron diversilobum*) also make up the understory vegetation.

Arroyo Willow Riparian Woodland

Arroyo Willow Riparian Woodland is present along the banks of Orr Creek, however, not adjacent to Dry Creek Bridge that crosses the creek. There is little to no vegetation present on the banks adjacent to the bridge; due to Caltrans Maintenance activities regarding Engineer access for bridge inspections. The habitat further up, and downstream, is dominated by arroyo willow (*Salix lasiolepis*), with other riparian trees, including white alder (*Alnus rhombifolia*), Fremont's cottonwood (*Populus fremontii*), big-leaf maple and mountain dogwood (*Cornus nuttallii*). The understory is dominated by dense Himalayan blackberry, but in areas where the Himalayan blackberry is less dominant, other shrubs occur including Pacific ninebark (*Physocarpus capitatus*) and western azalea (*Rhododendron occidentale*). The herbaceous layer consists of soft rush (*Juncus america*), cattail (*Typha sp.*), seep spring monkeyflower (*Mimulus guttatus*), water cress (*Nasturtium officinale*), yellow flag iris (*Iris pseudacorus*), creeping buttercup (*Ranunculus repens*), tall flat sedge/nut sedge (*Cyperus eragrostis*), American brooklime (*Veronica americana*), small-fruited sedge (*Scirpus microcarpus*), and iris-leaved rush (*Juncus xiphioides*).

Environmental Consequences

No Build Alternative

Under the no build alternative, no construction would take place. Therefore, there would be no impacts to vegetation or wildlife species in the study area.

Build Alternatives

Project construction would primarily be within the States Right-of-Way, with the exceptions of the intersections, were the project will encroach on the wetlands in the study area (see section 2.3.2: Wetlands and Other Waters). Impacts were considered to be temporary if only herbaceous vegetation was affected during construction and the area would be restored after project completion. Tree removal would be considered a permanent impact because of the time required for maturation of planted trees in restored areas.

This proposed project will not impact the wildlife corridor used by wildlife for seasonal or daily migration or be involved in habitat fragmentation, were it will have the potential for dividing sensitive habitat and thereby lessening its biological value.

Avoidance, Minimization, and/or Mitigation Measures

To minimize permanent and temporary impacts to sensitive plant communities, wetlands, and other sensitive resources, environmentally sensitive areas would be established to prevent unplanned impacts to these resources. A standard special provision would be included in the construction contract to delineate the placement of orange mesh fencing to protect these sensitive resources:

The following Caltrans Standard Specifications will be required for this project:

BIO-1: Contrator-Supplied Biologist
SSP 14-6.03D(1): CONTRACTOR-SUPPLIED BIOLOGIST: Monitor tributary diversion or dewatering for aquatic species, vegetation removal for aquatic and terrestrial species, ESA and silt fencing stability, and any other biological commitments for this project.

BIO-2: Natural Resource Protection Plan
SSP 14-6.03D(2): NATURAL RESOURCE PROTECTION PLAN (NRPP): The NRPP requires the use of a Contractor-Supplied Biologist. The Contractor gathers all the requirements from 14-6.03A Species Protection and from the various PLACs into one document, and describes the implementation measures the Contractor will take to assure that the requirements are met. The Contractor-Supplied-Biologist will be on site in order to survey, monitor, and potentially remove any wildlife species from the project area.

BIO-3: Protect Water Quality and Minimize Sedimentation Runoff in Wetlands and Other Waters

- Where working areas encroach on dry or wet streams, or wetlands, RWQCB-approved physical barriers adequate to prevent the flow or discharge of sediment into these systems will be constructed and maintained between working areas, streams, and wetlands. Discharge of sediment will be contained through the use of RWQCB-approved measures to keep sediment from entering protected waters.

- Oily or greasy substances originating from the Contractor's operations will not be allowed to enter, or be placed where they will later enter tributary waters.

- Asphalt concrete will not be allowed to enter tributary waters.

BIO-4: Install Fencing to Protect Sensitive Biological Resources

The wetland and other waters outside of direct construction impact areas will be delineated as environmentally sensitive areas (ESAs) on the project plans and in the project specifications. The boundaries of the ESA will be clearly marked in the field by the installation of a temporary high visibility fence. This fencing will be implemented as a first order of work and will remain in place until all construction activities are complete.

2.3.2 WETLANDS AND OTHER WATERS

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (CWA) (33 United States Code [USC] 1344), is the primary law regulating wetlands and surface waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. The lateral limits of jurisdiction over non-tidal water bodies extend to the ordinary high water mark (OHWM), in the absence of adjacent wetlands. When adjacent wetlands are present, CWA jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (USACE) with oversight by the U.S. Environmental Protection Agency (U.S. EPA).

The USACE issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of USACE's Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (40 Code of Federal Regulations [CFR] 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would

have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a "least environmentally damaging practicable alternative" (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (EO 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, EO 11990 states that a federal agency, such as FHWA and/or the Department, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to the construction and (2) the proposed project includes all practicable measures to minimize harm. A Wetlands Only Practicable Alternative Finding must be made.

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board (SWRCB), the Regional Water Quality Control Boards (RWQCBs) and the California Department of Fish and Wildlife (CDFW). In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA. In compliance with Section 401 of the CWA, the RWQCBs also issue water quality certifications for activities which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. Please see the Water Quality section for more details.

Affected Environment

An Aquatic Resources Delineation (wetland delineation) was conducted by Stantec Consulting Services Inc. biologists Brendan Cohen and Meghan Oats on April 26-28, 2021 2021. The routine delination included stadard three-parameter paired data points to determine potential wetlands features, other waters and uplands. This methodology is consistent with the approach outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers WetlandDelineation Manual: Arid West Region (Version 2.0)* (U.S. Army Corps of Engineers [USACE] 2008a).

Other waters are defined as traditional navigable waters and their tributaries (33 Code of Federal Regulations [CRF] 329). Delineation of other waters was based on presence of an ordinary high water mark (OHWM) as defined in USACE regulations (33 CRF 328.3 and 33 CFR 328.4). At least one data poimt was elected to best represent the OHWM of other waters for each other waters' type. These data points were used to collect information

regarding the depth and width of the OHWM along with dominant substrate, anthropogenic **influences**, and other featres (floodplain, low flow channel, etc.) associated with the other waters' type.

The Navigable Waters Protection Rule (NWPR) went into effect on June 22, 2020, in all states and jurisdictions except the State of Colorado and replaces all previous agency guidance documents, memoranda, and materials. The NWPR establishes the limit of federal regulatory authority by defining "waters of the United States"

Wetlands and Non-Wetland Waters

The types of wetlands (fresh emergent wetland, riparian wetland, scrub-shrub wetland, seasonal wetland, and vegetated ditch) and types of non-wetland waters (perennial stream, and ponds) were identified in the survey area.

Riparian Wetland

Riparian wetlands are generally associated with streams or other semi-permanent wetland types. These features are typically dominated by woody deciduous shrubs, trees, and vines but may also be entirely dominated by herbaceous species. Riparian wetlands exhibit positive indications of frequent ponding and/or flooding for long durations. Two riparian wetlands occur in the study area and based on the NWPR and the state definition of waters of the state, these features would be subject to the jurisdiction of the USACE and the RWQCB, respectively.

Seasonal Wetland

Seasonal wetlands can be variable, ranging from flat to low-lying areas that exhibit positive field indicators of long-duration saturation during the growing season to areas that exhibit a morphology and hydrology similar to vernal pools but lack a vernal pool vegetation community. Within the study area, one seasonal wetland occurs in the valley of a grazed pasture and based on the NWPR this feature is considered isolated and would not be subject to the jurisdiction of the USACE. However, because it meets the definition of a waters of the state, it would be subject to the jurisdiction of the RWQCB.

Fresh Emergent Wetland

Fresh emergent wetlands are frequently flooded, long enough for anaerobic conditions to occur and perennial herbaceous hydrophytic vegetation to become established. These wetlands generally form within basins or depressions located on flat to gently rolling topography. Seven fresh emergent wetlands occur in the study area and based on the NWPR and the state definition of waters of the state five of these features would be subject to the jurisdiction of the USACE and the RWQCB, respectively. However, based on the NWPR two of the features are considered isolated and would not be subject to the jurisdiction of the USACE, but it would be subject to the jurisdiction of the RWQCB

Vegetated Ditch

Vegetated ditches are human-made linear features that support ephemeral or intermittent flow, and both meet the definition of a wetland and have OHWM indicators. These features are considered vegetated because they contain a dominance of hydrophytic vegetation. Within the study area, one vegetated ditch is excavated along the highway for drainage.

Based on the NWPR and the state definition of waters of the state these features would be subject to the jurisdiction of the USACE and the RWQCB, respectively.

Other Waters:

Perennial Stream

Perennial streams consist of natural drainages that convey water perennially or near perennially, such as rivers and larger streams. Perennial streams typically support a well-developed riparian corridor. Seven perennial streams occur in the study area and are characterized as bed and bank features that exhibit indicators of an OHWM including a break in bank slope and change in average sediment texture, vegetation species, and vegetation cover. Based on the NWPR and the state definition of waters of the state these features would be subject to the jurisdiction of the USACE and the RWQCB, respectively

Intermittent Stream

Intermittent streams include natural drainages that exhibit an OHWM and convey waters intermittently during the late fall, winter and spring months. Hydrology is usually provided by both precipitation and groundwater discharge. Larger intermittent streams may support a well-developed riparian corridor. Four intermittent streams occur in the study area and are characterized as bed and bank features that exhibit indicators of an OHWM including a break in bank slope and change in average sediment texture and vegetation cover. Based on the NWPR and the state definition of waters of the state these features would be subject to the jurisdiction of the USACE and the RWQCB, respectively.

Ephemeral Stream

Ephemeral streams include natural drainages that exhibit an OHWM and convey waters during and directly after precipitation events. These drainage channels are usually located above the groundwater reservoir and lack a well-developed riparian corridor. Seven ephemeral streams occur in the study area and are characterized as bed and bank features that exhibit indicators of an OHWM including a break in bank slope and change in average sediment texture, vegetation species, and vegetation cover. Based on the NWPR these features are considered ephemeral and would not be subject to the jurisdiction of the USACE. However, because it meets the definition of a waters of the state, it would be subject to the jurisdiction of the RWQCB.

Pond

Ponds are open water features that are part of a tributary system, have an interstate or foreign commerce connection, or are created for ranching such as stock ponds for cattle. They may be seasonal or perennial depending on the nature of their water source and may have hydrophytic vegetation growing within or along the pond margins. Two ponds occur in the study area and are characterized as open water features that exhibit indicators of an OHWM including break in slope and change in average sediment texture, vegetation species, and vegetation cover. Based on the NWPR and the state definition of waters of the state these features would be subject to the jurisdiction of the USACE and the RWQCB, respectively.

Environmental Consequences

No Build Alternative

Under the no build alternative, no construction would take place. Therefore, there would be no impacts to vegetation or wildlife species in the study area.

Build Alternatives

Project construction would encroach on the of jurisdictional wetlands and waters of the U.S. and State within the study area, resulting in both direct/permanent and temporary impacts. Impacts associated with SR-49 intersection modifications are considered to be permanent if they would result in the placement of permanent fill in the of jurisdictional wetlands and waters of the U.S. and State. See Appendix G for Wetland Impact Mapping.

Alternative 1, the construction of the proposed project would directly/permanently impact approximately 0.48 acres of jurisdictional wetlands and waters of the U.S. and State.

Alternative 2, the construction of the proposed project would directly/permanently impact approximately 0.70 acres of jurisdictional wetlands and waters of the U.S. and State.

Alternative 3, the construction of the proposed project would directly/permanently impact approximately 0.70 acres of jurisdictional wetlands and waters of the U.S. and State.

Implementation of the avoidance and minimization efforts described below would minimize the impacts on wetlands. Additional mitigation is proposed to compensate for the permanent loss of wetlands.

Avoidance, Minimization, and Mitigation Measures

In addition to the water quality BMPs and project SWPPP, to ensure that the proposed project minimizes effects on wetlands in and adjacent to the designated work areas, Caltrans will protect water quality and minimize sedimentation runoff in wetlands and other waters (BIO-3) install fencing (BIO-4). Additional avoidance and minimization measures may be agreed upon during the future permitting phase.

BIO-5: Compensatory for Impacts on Wetlands

Mitigation for impacts to jurisdictional wetlands and other waters of the U.S. and State will be implemented to achieve no-net-loss of the functions and values within the study area in accordance with the USACE Habitat Mitigation and Monitoring Proposal Guidelines (1991).

The National Fish and Wildlife Foundation's Sacramento District California In-Lieu Fee Program provides a mitigation option that can be used by Caltrans to compensate for authorized impacts to aquatic resources. Caltrans may purchase mitigation credits through the In-Lieu Fee Program to compensate for impacts to wetlands and waters of the U.S. and State. Another alternative is to purchase credits at a Mitigation Bank within the project Service Area.

All temporarily disturbed wetland areas, for all alternatives, would be restored to pre-project contours and conditions for all alternatives.

Wetlands Only Practicable Finding
Development of this project has complied with EO 11990, with regard to wetlands. Caltrans finds that there is no practicable alternative and the proposed project includes all practicable measures to minimize harm.

Meeting the purpose and need for the proposed project requires modification to the intersections within the project limits. Due to the proximity of adjacent wetlands and the design parameters required, complete avoidance of wetlands is not possible. Alternative 1 would result in 0.42 acres of impact, and Alternative 2 would result in 0.55 ares of impact, and Alternative 3 would also result in 0.55 acres of impact to wetlands.

Under the No-Build Alternative, no wetlands would be affected, but the No-Build Alternative does not meet the project purpose and need because it does not address the concerns that are present in the project area.

Practicable measures to minimize harm to wetlands are built into the project design as well as identified above in the "Avoidance, Minimization, and/or Mitigation Measures". Through extensive review and through coordination with resource agencies, the design of the project uses the least footprint possible.

Based on the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed project includes all practicable measures to minimize harm to wetlands that may result from such use.

2.3.3 PLANT SPECIES

Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) have regulatory responsibility for the protection of special-status plant species. "Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species section 2.3.5 in this document for detailed information about these species.

This section of the document discusses all other special-status plant species, including CDFW species of special concern, USFWS candidate species, and California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Department projects are also subject to the Native Plant Protection Act, found at California Fish and Game Code, Section 1900-1913, and the California Environmental Quality Act (CEQA), found at California Public Resources Code, Sections 21000-21177.

Affected Environment

Botanical surveys were conducted on June 18, 22, and 23, 2020. Additional botanical surveys will be conducted in the spring/summer of 2021.

The conservation of special status native plants and their habitats, as well as sensitive natural communities, is integral to maintaining biological diversity. Caltrans analyzes impacts to these rare plant species and natural communities on all projects where habitat is present.

Based on the botanical surveys there are no observed occurrences of Federal or State listed special status plant species within the ESL and no special status plant species were detected during botanical surveys. Additional botanical surveys will be conducted Spring/Summer 2021; if any special status plant species are observed, Caltrans will coordinate with CDFW or USFWS, and update the NES.

Environmental Consequences

No Build Alternative

Under the no build alternative, no construction would take place. Therefore, there would be no impacts to plant species in the study area.

Build Alternatives

The proposed project would have no effect on any special status plant species because there presence is not anticipated within the project area.

Avoidance, Minimization, and/or Mitigation Measures

There are no avoidance and minimization efforts proposed due to lack of presence of special status plants within the ESL. Environmentally sensitive areas (ESA) fencing, best management practices (BMPs), and project avoidance and minimization measures will prevent any impacts to special status plant species that may be located outside the ESL.

2.3.4 ANIMAL SPECIES

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The USFWS, CDFW, and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) are responsible for implementing these laws. All other special-status animal species are discussed in this section, including CDFW fully protected species and species of special concern, and USFWS or NOAA Fisheries candidate species.

Federal laws and regulations relevant to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife include the following:

- California Environmental Quality Act
- Sections 1600 – 1603 of the California Fish and Game Code
- Sections 4150 and 4152 of the California Fish and Game Code

Non-special-status migratory birds and raptors have the potential to nest in trees and shrubs in the environmental study area. Although these species are not considered special-status wildlife species, their occupied nests and eggs are protected by CFGC Sections 3503 and 3503.5 and the Migratory Bird Treaty Act.

Affected Environment

Habitat assessment surveys were conducted on August 7, 2020, at Orr Creek (also known as Deer Creek) by Caltrans biologist Sarah-Jane Gerstman, to identify potential *Rana boylii* [Foothill yellow-legged frog (FYLF)] habitat within aquatic features in the ESL and within 1-mile radius of the ESL (where accessible). Not all aquatic features were accessible due to private property restrictions.

The FYLF is a California State Species of Special Concern, a State listed Candidate Threatened species, and a U.S. Forest Service and Bureau of Land Management Sensitive Species. FYLF are not federally listed nor do they have federally designated critical habitat. FYLFs inhabit shallow, slow, gravelly streams and rivers with sunny banks, in forests, chaparral, and woodlands. Breeding occurs from mid-March until early June when streams have slowed from winter runoff. Clusters of eggs are attached to the downstream side of submerged rocks. FYLF avoid rapid waters to protect the egg masses from being swept away. This species is a stream-dwelling form that deposits masses of 300-1200 eggs on the downstream side of cobbles and boulders over which a relatively thin, gentle flow of water exists. Tadpoles transform in about 15 weeks, from July to September. The daily and seasonal movement ecology and behavior of adults is essentially unknown (Bondi, 2013). The USFWS Federal Register "Endangered and Threatened Wildlife and Plants; Endangered Species Status for Sierra Nevada Yellow-Legged Frog and Northern Distinct Population Segment of the Mountain Yellow-Legged Frog, and Threatened Species Status for Yosemite Toad" states that Sierra Nevada Yellow-Legged Frogs may travel up to 2.05 miles along streams. The Federal Register study referenced Wengert in the USFWS Report states that this travel distance may have actually been for foothill yellow-legged frogs.

In this section of Orr Creek (also known as Dry Creek), the substrate was predominately sand and silt with some cobbles in the deepest part of the channel. This portion of Orr Creek does not have suitable breeding habitat for FYLF as it lacks the correct substrate and does not provide the shallows necessary for tadpole rearing. Breeding typically occurs in relatively wide and shallow channels with cobble, boulder, and gravel substrates (Thomson et. al. 2016: 88).

Flow measurements were taken on the edge (19 cm/s or 0.19 m/s) and in the middle of the channel (33 cm/s or 0.33 m/s). In a habitat suitability study, low velocity habitat with a preferred velocity of 0.05 m/s and cobble bar substrates provided higher suitability for oviposition sites (Bondi et al. 2013, Hayes et al. 2016). Tadpole rearing sites are in the same or proximate habitat as egg masses and low water velocity and shallower water depth habitat are more suitable for these sites (Bondi et al. 2013). Tadpoles remain in refugia in the substrate when they become exposed to higher velocities that can occur with the rainy season towards the end of their development. When FYLF were experimentally located from

low-velocity patches to high-velocity patches, the degree to which the substrate was embedded did not change the short-term behavioral response of FYLF to increased velocity; this lack of response may place tadpoles at risk in more sediment-embedded streams because fewer refugia from high-velocity conditions exist (Kupferberg et al. 2008, Hayes et al. 2016). As such, adult female frogs may select oviposition sites that place tadpoles at the lowest risk due to presence of ample refugia such as cobbles and boulders.

Orr Creek is located within the Upper Coon-Upper Auburn watershed. According to the CNDDB, the nearest occurrences of FYLF to the proposed project is approximately 6 miles southeast of the project location (2007 occurrence) and multiple sightings 8 miles northeast of the project location (2009 occurrence). This occurrence, as well as all other FYLF occurrences within 10 miles of the project, is located within the North Fork American watershed. There is no hydrological connectivity between the two watersheds; therefore, there will be no impacts to FYLF.

Lone Star Canal is located just north of the project ESL. It is an intermittent canal delivering water for irrigation purposes during spring/summer. The canal lacks habitat conditions suitable to FYLF.

Wildlife

Wildlife species commonly associated with these various habitats habitat include western toad (*Bufo boreas*), pacific chorus frog (*Pseudacris regilla*), western aquatic garter snake (*Thamnophis couchi*), red-shoulder hawk (*Buteo lineatus*), Nuttall's woodpecker (*Picoides nuttallii*), black phoebe (*Sayornis nigricans*), Virginia opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), mule deer (*Odocoileus hemionus*), and many other species.

Environmental Consequences

No Build Alternative

Under the no build alternative, no construction would take place. Therefore, there would be no impacts related to invasive species in the study area.

Build Alternatives

When considering the lack of suitable substrate and flow, and no direct connectivity to the closest FYLF occurrences, the likelihood that this site supports any life stage of FYLF is extremely low to none. In addition, the project scope does not include any in-water work or work under the bridge; the scope only includes adding a median barrier on top of the bridge. Caltrans has determined the proposed project would not result in "take" of the FYLF per the California Fish and Game Code. This determination is for all Alternatives 1, 2, and 3.

Avoidance, Minimization, and/or Mitigation Measures

This species is not anticipated to be present within the project area; however, the project has been designed to minimize effects on aquatic resources identified in the study area. Avoidance and minimization measures to protect wetlands and other waters of the U.S. and State, listed in section 2.3.2 will also protect any aquatic species.

2.3.5 THREATENED AND ENDANGERED SPECIES

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (FHWA) (and the Department, as assigned), are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take Statement or a Letter of Concurrence. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife (CDFW) is the agency responsible for implementing CESA. Section 2080 of the California Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFW. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of FESA, the CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

Affected Environment

Habitat assessment surveys were conducted on June 18, 22, and 23, 2020, to identify potential *Rana draytonii* [California red-legged frog (CRLF)] habitat within aquatic features in the ESL and within 1-mile radius of the ESL (where accessible). Not all aquatic features were accessible due to private property restrictions.

The historic range of CRLF extended along the coast from the vicinity of Point Reyes National Seashore, Marin County, California and inland from the vicinity of Redding, Shasta County, California, southward to northwestern Baja California, Mexico. This range encompassed 46 counties, but the subspecies has been extirpated from 24 of those counties which represents 70 percent of its former range (USFWS, 1996). Only isolated populations have been documented in the Sierra Nevada, northern Coast, and northern Transverse ranges. Within the Sierra Nevada Range, there are currently nine extant populations of CRLF. The project ESL is within historic and current range of CRLF.

As stated in the USFWS CRLF Recovery Plan for CRLF (2002), the frogs breed from December to April in ponds and streams. They seem to choose the sites with the warmest water available as long as it is at least 8 inches deep. Tadpoles hatch in a few days, depending on temperature and develop during the spring. They begin to transform into froglets in June and July, and by late August most have completed the process.

Outside of the breeding season, adult frogs seek out water greater than 3 feet deep. In some areas, late summer water can become scarce and frogs will travel to congregate in old dug wells, in deep holes in drying streams, or in and around springs. With the first soaking rains in fall, frogs tend to move away from their summer refuges. During a rainy winter, they may establish a temporary residence quite a distance from any body of water. At this time, they often gradually move towards the late winter breeding site. At the present time, stock ponds are useful for rehabilitation and enhancement of CRLF populations only if the frogs can get to them. The largest CRLF densities are associated with deep-water pools with dense stands of overhanging willows and an intermixed fringe of cattails (Jennings, 1988).

Hayes and Jennings (1986) found CRLF frog larvae are vulnerable to fish predation, especially immediately after hatching when non-feeding larvae are relatively immobile. Ponds that do not dry out during the summer often contain sunfish (*Lepomis spp*.), largemouth bass (*Micropteris spp.*), and bullfrogs (*Lithobates catesbeianus*), crayfish (*Procambarus clarkia*), mosquito fish (*Gambusia affinis*), who all predate on CRLF. Bullfrogs from a pond with a large population will quickly invade a pond.

A CRLF Habitat Site Assessment was conducted within 400 ft. of the ESL and within a 1-mile radius of the ESL (where access was available).

The following existing information was reviewed prior to field surveys to identify potential CRLF habitat within the site assessment area:

- August 2005 Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog.
- United States Geologic Service (USGS) 7.5-minute topographic maps (Auburn and Lake Combie quadrangles).
- Aerial photography.
- Records of the CDFW's CNDDB (2021).

The project vicinity was assessed for presence and quality of the "primary constituent elements" that the USFWS considers for the designation of potential "critical habitat" for CRLF (69 FR 19619, 71 FR 19244 19346, and 74 FR 51825 51829).

Ponds and streams surveyed within the project CRLF site assessment area have a potential to support CRLF and their breeding habitat if it were not for the abundant presence of known predators to CRLF. All aquatic features surveyed in the site assessment area contained one or more non-native species known to prey on most CRLF life cycles. The predator species identified included bullfrogs (*Rana catesbeiana*), black bass (*Micropteris sp.*), blue gill (*Lepomis macrochirus*), mosquito fish (*Gambusia affinis*), and sunfish (*Centrarchids sp.*).

Habitat quality in the site assessment area ranges from un-vegetated or manicured stock ponds and small perennial streams, to ponds with greater shoreline complexity and more extensive aquatic vegetation. Based solely on observations of the structure and quality of available habitat, without considering the potential presence of bullfrog competition or predatory fish, many of the ponds surveyed are suitable habitat for CRLF. However, considering the presence and abundance of predatory species (bullfrogs, predatory fish) observed during surveys, it is unlikely that CRLF would be present. These non-native species appear to be well established in the project area.

Environmental Consequences

Nearest Observed CRLF Occurrences and Designated Critical Habitat

- The first nearest observed occurrence was observed in 2009 and is approximately 19 miles southeast of the project area at the South Fork of the American River drainage in El Dorado County in the Georgetown quadrangle.
- The second nearest observed occurrence was observed in 2006 and is approximately 20 miles southeast of the project area at the Middle Fork American River drainage in Placer County, in the Michigan Bluff quadrangle; there are two occurrences near this location. The second observed occurrence does not record the observation date.
- The third nearest observed occurrence of CRLF was in 2007 approximately 23 miles northwest of the project near the South Yuba River drainage in Nevada County near Sailor Flat in the North Bloomfield quadrangle.
- The nearest critical habitat (NEV-1) is approximately 20 miles northeast of the ESL, in Nevada County, near Sailor Flat in the North Bloomfield quadrangle.

Project Impacts

Based on the results of surveys, analyses of habitat conditions and requirements, and current range of CRLF, it was determined that the project will have no effect on CRLF and all listed species on the USFWS and NOAA Fisheries species lists. Potential impacts to CRLF were ruled out based on the following:

- All aquatic features surveyed in the site assessment area contained one or more non-native species known to prey on most of the CRLF life cycles. Because these non-native species appear to be well established in the project area, the likelihood for the presence of CRLF in the area is substantially decreased.
- Surveys within the site assessment area did not detect CRLF.
- CRLF have not been recorded within the vicinity of the project area. No known CRLF records occur within the Upper Coon Upper Auburn sub-watershed where the project is located.
- The nearest observed occurrence of CRLF was observed in 2009 and is approximately 19 miles southeast of the ESL, at the South Fork of the American

River. The second nearest occurrence was observed in 2006 and is approximately 20 miles southeast of the ESL, at the Middle Fork American River. The third nearest observed occurrence was in 2007 approximately 23 miles northwest of the ESL near Sailor Flat. The ESL is approximately 20 miles from CRLF designated critical habitat.

- No new barriers to CRLF dispersal (removal of culverts and placement of additional structures) will be implemented as part of this project. Most new culverts placed will be larger in size, making them more likely to be used as dispersal routes.
- Caltrans will incorporate avoidance and minimization measures and BMPs to reduce the project impacts to aquatic features.
- A qualified biologist will be contracted to assure there will be no harm to wildlife species and sensitive habitats during construction.

Avoidance, Minimization, and/or Mitigation Measures

This species is not anticipated to be present within the project area; however, the project has been designed to minimize effects on aquatic resources identified in the study area. The following avoidance and minimization measures to protect wetlands and other waters of the U.S. and State, listed in section 2.3.2, will also protect any aquatic species.

Additionally, typical Caltrans project BMP's will be implemented to reduce water quality impacts, which may include placement of silt fencing or filter fabric along the banks of any affected waterway once the vegetation is removed.

Construction activities are scheduled to happen outside of the rainy season, which would reduce potential for impacts on the tributaries located in the project area.

2.3.6 INVASIVE SPECIES

Regulatory Setting

On February 3, 1999, President William J. Clinton signed Executive Order (EO) 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration (FHWA) guidance issued August 10, 1999 directs the use of the State's invasive species list, maintained by the California Invasive Species Council to define the invasive species that must be considered as part of the National Environmental Policy Act (NEPA) analysis for a proposed project.

Affected Environment

Invasive plant species include species designated as federal noxious weeds by USDA, species listed by CDFA, and invasive plants identified by Cal-IPC. Invasive plants displace native species, change ecosystem processes, alter plant community structure, and lower wildlife habitat quality (California Invasive Plant Council 2006:1). Road, highway, and related construction projects are some of the principal dispersal pathways for invasive plants and their propagules. No plant species designated as federal noxious weeds have been identified in the study area. Invasive plant species occur in all of the non-wetland vegetated cover types in the study area.

Botanical surveys were conducted June 18, 22, and 23, 2020. Invasive species that were observed within the ESL include nonnative, Himalayan blackberry (*Rubus discolor*), fennel (*Foeniculum vulgare*), star thistle (*Centaurea solstitialis*), white top (*Lepidium latifolium*), and medusa head (*Taeniatherum caputmedusae*). Invasive species were observed in the riparian areas along Orr/Dry Creek and include giant reed (*Arundo donax*), blue gum eucalyptus (*Eucalyptus globulus*), fennel (*Foeniculum vulgare*), black locust (*Robinia pseudoacacia*), Himalayan blackberry, fig (*Ficus carica*) and tree-of-heaven (*Ailanthus altissima*). No established infestations of noxious or highly invasive weeds were observed within the ESL.

Environmental Consequences

No Build Alternative

Under the no build alternative, no construction would take place. Therefore, there would be no impacts related to invasive species in the study area.

Build Alternatives

The proposed project would create additional disturbed areas for a temporary period. Areas where temporary disturbance occurs would be more susceptible to colonization or spread by invasive plants. Implementation of avoidance and minimization measures provided below will help to avoid and minimize the introduction and spread of invasive plants.

Avoidance, Minimization, and/or Mitigation Measures

BIO-6: Avoid and Minimize the Spread of Invasive Plant Species during Project Construction and Restore Temporarily Disturbed Habitat

To avoid and minimize the introduction of new invasive plants and the spread of invasive plants previously documented in the project area, the following BMPs will be implemented during project construction.

- Use a weed-free source for project materials (e.g., straw wattles for erosion control that are weed-free or contain less than 1% weed seed).
- Prevent invasive plant contamination of project materials during transport and when stockpiling (e.g., by covering soil stockpiles with a heavy-duty, contractor-grade tarpaulin).
- Use a seed mix for erosion control activities comprising California native species appropriate to the project location.

2.4 Cumulative Impacts

Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

The California Environmental Quality Act (CEQA) Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the National Environmental Policy Act (NEPA) can be found in 40 Code of Federal Regulations (CFR) Section 1508.7.

Affected Environment

In consideration of the proposed project with reasonably foreseeable future projects or actions, potential impacts may be identified. Four projects were identified on the SR-49 segment within County of Nevada and County of Placer. Roadway features upgraded to current standards would be included in these current and upcoming projects.

EA: 03-0H210, NEV-49 Culvert Rehabilitation (South), proposes to rehabilitate existing culverts and corrugated steel pipe down drains exhibiting damage or needing remedial treatments to preserve and extend their service life. The limits of this project begin in Placer County at PM 8.23 and continue into Nevada County to PM 7.17. Project construction is planned to start in April 2021.

EA: 03-0H420, Count Station Repair and Installation, proposes to upgrade the performance and maintenance requirements of the existing traffic census detection system for the Regional Transportation Management Center to provide a sufficient detection system while lowering operational costs and improving communication speeds in various counties, state routes, and post miles. The project is already in construction. The project has been in construction since September 2020.

EA: 03-4H020, Safety Improvement, proposes to install safety improvements at multiple locations in various counties, state routes, and post miles. Improvements include advance flashing beacons, que warning systems, pedestrian activated flashing beacon’s, signal

system modifications and upgrades, roadway lighting, ramp meter warning flashers and warning signs. The project has been in construction since June 2020.

EA: 03-3H830, PLA-49 Sidewalk Gap Closure, proposes to construct sidewalks and accessible curb ramps at various locations between post miles 3.7 and 7.5 along State Route 49 (SR 49) in and near Auburn, in Placer County. Project construction is planned to start in November 2021.

Existing and Future Land Use

County of Placer land use plans for the area surrounding the proposed project are not significantly changing from the present use. No changes to the agencies' goals, objectives and/or management directives require modification due to the combined or individual projects. The proposed project would not contribute to any cumulative impacts on existing or future land use or management plan objectives.

Consistency with State, Regional, and Local Plans and Programs

The Placer County Regional Transportation Plan identifies minimal changes for the roadway use demands over the next 20 years. The project support the goals of the State and Regional transportation plans as well.

Community Character and Cohesion

The proposed project will have a slight impact on the community character due the installation of the median barrier. However, there are no cumulative effects on community character or cohesion.

Utilities and Emergency Services

Utilities
The proposed project conflicts with the underground fiber optic lines, underground irrigation facilities, as well as overhead utility lines. Relocation of these facilities is anticipated to be required for this project. However, these activities will be coordinated with adjacent parcets as to not affect utility interruption, therefore there is no cumulative affect to utilities.

Emergency Services
During construction, lane closures may be required. Any required temporary lane closures would be coordinated with emergency service providers so as not to hinder emergency responses. The build alternatives are not anticipated to adversely affect response time for emergency services associated with fire station or police department personnel. The build alternatives, after constructed, may improve response times of emergency services by improving traffic flow and reducing delay. In addition, the build alternatives are intended to reduce conflicts in the study area, which would result in fewer emergency service calls. Because this project and adjacent projects would be constructed at various seasons, and coordintation to ensure no delay in emergency responses would occur, there is no cumulative affect to emergency services.

Traffic and Transportation/Pedestrian and Bicycle Facilities

If work on multiple projects were to overlap with the proposed project during construction, impacts related to traffic delays and detours for travel in the region could occur. While some level of disruption in traffic will occur, cumulative construction impacts would be temporary

and individual projects would contain measures to avoid major traffic delays. Therefore, it is not anticipated that temporary effects of construction of multiple projects would combine to result in cumulatively impacts.

Visual/Aesthetics

The temporary construction impacts associated with the proposed project would not result in cumulative visual impacts because they would be temporary. The project may slightly alter the existing visual character of the area due to the introduction of new high contrast elements of pedestrian crosswalks, colorized chicanes, and overhead illuminated warning signs, the corridor's color will be moderately changed. However, the majority of pattern elements will remain intact. Though some of the foreground will be altered, the mid and background will retain the oak savannah landscape of wide open fields punctuated by native oak trees. Only at the intersection legs will there be any impact beyond the shoulder.

Overall, the proposed projects would not contribute to cumulative impacts related to the planned proposed project, and rural development in the area because the build alternatives would not substantially alter the existing visual landscape, degrade the visual quality of the project area, or alter levels of light and glare. As such, the combined visual effect of both alternatives with other projects planned, recently and in construction or currently in construction would not result in impacts that are cumulatively considerable.

Cultural Resources

The proposed project is not anticipated to cumulatively impact cultural resources, as those adjacent projects were confirmed to not extend into the projects area of Direct Impact and thus will be avoided and protected by implementing avoidance measures. Please see 2.1.8 Cultural Resources Section for AMMs.

Water Quality and Storm Water Runoff

The project area reside in a High-Risk Receiving Watershed and it is acknowledged that (throughout the construction process) there exists the potential that certain activities may result in erodible soils or suspended solids intermittently being introduced to waterways. Short-term discharges of chemical pollutants, oil or grease, may also be transported into waterways as the result of construction equipment use. However, it is anticipated that the implementation of standard minimization and avoidance measures, best management practices, and field inspections should minimize the risk that erodible soils, and suspended solids or pollutants, will enter receiving waters within the project limits. Therefore, there are no cumulative impacts expected for Water Quality and Storm Water Runoff.

Hazardous Waste and Materials

Minor hazardous waste/ materials issues are present in all of the projects considered for cumulative impacts. Preliminary Site Investigations during the PS&E phase of project developments are conducted sampling of aerially deposited lead. Thermoplastic/ lead paint may be removed from the existing road surfaces prior to lane shifting and temporary detours. Standard Special Provisions to address these minor hazardous waste/ materials will be developed for the projects prior to finalizing PS&E. None of the locations are Cortese listed sites. There are no cumulative effects for hazardous waste and materials.

Air Quality

According to the guidance from PCAPCD, the construction and operational criteria pollutant emissions the buildout of the of the general plans of Placer County, could result in a cumulative impact. Alternatives contribution to this effect would be considered cumulatively considerable, as the magnitude of emissions from other future projects is currently unknown. Although applicable air district regulatory measures would reduce the project-related construction and operational emission impacts, during the design year cumulative impacts related to operational emissions in the plan area may be slightly higher than PCAPCD operational project- and cumulative-level thresholds.

The Count Station Repair, PLA-49 Sidewalk Gap Closure, Culvert Rehabilitation and Install and Safety Improvement Project are all exempt from air quality conformity per 40 CFR 93.126, Table 2 of 40, as safety road projects and are not considered in cumulative impacts.

Hydrology and Floodplain

The Placer 49 Safety Barrier Project, is located within FEMA Flood Insurance Rate Map (FIRM) panel 06061C0755H for Placer County, effective November 2, 2018. The proposed project would not infringe upon the exisiting floodplain. There are no cumulative impacts expected for hyrdology and floodplain.

Wetlands and Other Waters

There are no impacts to wetlands or other waters in either the Count Station Repair and Install and Safety Improvement Project projects. PLA-49 Sidewalk Gap Closure and Culvert Rehabilitation has implemented standard avoidance measures to have no effect on resources at the various locations of that project. Therefore, there are no cumulative impacts expected to wetlands and Other Waters of the US.

Animal Species

There are no impacts to animal species or their habitat in either ther proposed PLA-49 Safety Barrier Project, Count Station Repair, PLA-49 Sidewalk Gap Closure, Culvert Rehabilitation and Install and Safety Improvement Projects. No cumulative impacts to animal species are expected.

Threatened and Endangered Species

There are no substantial impacts to listed species or their habitat in either PLA-49 Safety Barrier Project, Count Station Repair, PLA-49 Sidewalk Gap Closure, Culvert Rehabilitation and Install and Safety Improvement Projects. No cumulative impacts for threatened or endangered species are expected.

Invasive Species

There are no invasive species identified in the impacted areas of either Count Station Repair, PLA-49 Sidewalk Gap Closure, Culvert Rehabilitation and Install and Safety Improvement Projects. There are no cumulative impacts expected for invasive species.

Chapter 3 – California Environmental Quality Act (CEQA) Evaluation

3.1 Determining Significance under CEQA

The proposed project is a joint project by the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). FHWA's responsibility for environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 United States Code Section 327 (23 USC 327) and the Memorandum of Understanding dated December 23, 2016, and executed by FHWA and Caltrans. The Department is the lead agency under CEQA and NEPA.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an EIS, or a lower level of documentation, will be required. NEPA requires that an EIS be prepared when the proposed federal action (project) *as a whole* has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, does require the Department to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an EIR must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of "mandatory findings of significance," which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

3.2 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects will indicate that there are no impacts to a particular resource. A NO IMPACT answer in the last column reflects this determination. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects such as Best Management Practices (BMPs) and measures included in the Standard Plans and Specifications or as

Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below; see Chapters 1 and 2 for a detailed discussion of these features. The annotations to this checklist are summaries of information contained in Chapter 2 in order to provide the reader with the rationale for significance determinations; for a more detailed discussion of the nature and extent of impacts, please see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

3.2.1 AESTHETICS

CEQA Significance Determinations for Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:

a) Have a substantial adverse effect on a scenic vista?

No Impact. A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. In addition, some scenic vistas are officially designated by public agencies, or informally designated by tourists and tourist guides. A substantial adverse effect to such a scenic vista is one that degrades the view from a designated view spot.

Within the region and near postmile 8.7, SR 49 provides few views that could potentially be considered a vista point along the main roadway. In addition, Caltrans has not officially designated a scenic vista in the general vicinity of the project area, nor is an informal scenic vista been established and utilized by the general public for viewing the site. Informal, unimproved pullouts exist on the adjoining roads that view the intersections of Lone Star and Lorenson, but they do not provide expansive or memorable views of the region and are not used by the public as points of observation of the surrounding landscape. Therefore, all alternatives will have no impact on scenic vistas.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Less Than Significant Impact. Scenic resources can be defined as assets in the visual environment that are considered valuable; and, are not limited to, natural features, agriculture, built environments, transportation, infrastruc-ture, and signage.

Along the affected highway corridor, SR 49 is listed as an Eligible State Scenic Highway. As an Eligible Scenic Highway, it contains valuable aesthetic resources for the visual corridor. Within the project limits, the most notable scenic resources are the surrounding savannah landscape and native oak trees. All project alternatives will affect the landscape to a minor degree, but they are not expected to significantly reduce the contributing aesthetic resources. Therefore, the project is expected to have a less than significant impact on scenic resources.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less Than Significant Impact. Visual character can be defined as features and elements that make a specific visual environment distinctive and cohesive. Scenic or visual quality can be defined as natural features, cultural ele-ments, as well as experiences and perceptions of both the individual and the larger community.

The project site is characterized by replacement intersections. Alternative 1 's configuration is the least compatible, but it is expected to retain the substantial visual character and visual quality elements. Alternative 2 & 3's configurations closely follow existing conditions and will retain scenic elements that contribute to the corridor's visual character and quality. Because all alternatives will maintain the dominate visual features of the corridor, the project's impacts on visual quality and visual character are expected to be less than significant.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less Than Significant Impact. Substantial light and glare can be defined as a viewable source of light that has a significant ratio of luminance between the task (that which is being looked at) and the glare source.

At this time the proposed work is expected to be completed during normal working daylight hours so as to not necessitate nighttime illumination sources, and all equipment will have appropriate anti-glare surface coatings to prevent glare. Any potential for light and glare would be temporary and all temporary construction activities that require nighttime illumination sources for staging, access, or other construction activities shall comply with Caltrans Standard Specification 7-1.04, Public Safety. Therefore, no substantial new source of lighting or glare is proposed as part of the project.

3.2.2 AGRICULTURE AND FOREST RESOURCES

CEQA Significance Determinations for Agriculture and Forest Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. Although permanent acquisition of land is anticipated as part of this project, no Prime Farmland would be acquired. There is no land classified as Prime Farmland in the project area. The project would not convert any land currently used for agriculture to non-agricultural use.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. There are parcels under the Williamson Act contract within the project limits. However, the impact to these parcels will be minimal and not result in a conflict with a contract. There will be no impacts to Prime Farmland or Farmland of Statewide Importance.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. The proposed project would not conflict with existing zoning for forestland/timberland since there is no forestland in the project area.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. There is no forestland in the project area. Therefore, the project would not result in a loss or conversion of forestland.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. The proposed project would not result in the conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.

3.2.3 AIR QUALITY

CEQA Significance Determinations for Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

No Impact. The project does not obstruct implementation of the applicable air quality plan of Placer County Air Pollution Control District.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact. The proposed project is located in a nonattainment area for a National O3 and PM2.5 Standards, and is listed and financially constrained in MTIP, which was found to conform by SACOG. The operational air quality impacts would not be substantial; however cumulatively considerable impacts of PM10 in related to both no-build and build alternatives during the design year may be anticipated.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. The sensitive receptor identified within the project site are residential areas. No considerable impacts to criteria pollutants are anticipated as the project's operational emissions are not significant under the build alternatives. For temporary construction emissions, construction dust and equipment exhaust emissions measures shall be implemented through Caltrans' special provisions and standard specifications, during all phases of construction work thus, the impact would be less than significant.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact. Temporary construction activities could generate fugitive dust from the operation of construction equipment. The project will comply with construction standards adopted by the PCAPCD as well as Caltrans standardized procedures for minimizing air pollutants during construction.

3.2.4 BIOLOGICAL RESOURCES

CEQA Significance Determinations for Biological Resources

Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or NOAA Fisheries?

No Impact. Survey results have concluded that the Environmental Study Area does not contain suitable habitat for any candidate, sensitive or special status species as recognized by California Department of Fish and Wildlife or U.S. Fish and Wildlife.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No Impact. This project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less Than Significant with Mitigation. Proposed project will result in the placement of permanent fill into a riparian wetland. However, the permanent loss of riparian wetland habitat will be offset by compensatory mitigation or mitigation determined during the permitting phase of this project.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No Impact. This project will not affect any migratory wildlife corridors or the movement of any native resident or migratory fish or wildlife species.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. There are no anticipated local ordinances or preservations policies protecting biological resources that have to potential to occur within the Environmental Study Area.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. This project will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3.2.5 CULTURAL RESOURCES

CEQA Significance Determinations for Cultural Resources

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

Less than Significant Impact. As discussed in the Cultural Resources Section in Chapter 2, there are no known historical resources within the Area of Direct Impact (ADI). However, the APE encompasses one known resource which will be protected in their entirety form any potential effects with the following measure being incorporated (see Chapter 2, Cultural Resources section for detailed discussion of measures):

- **Cultural-1**: Environmentally Sensitive Area

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

No Impact. One archaeological resource is outside of the projects Areas Directly Impact (ADI) by the project and will be further avoided through the establishment and enforcement of an environmentally sensitive area (ESA). However, the potential for discovery of unknown cultural resources does exist. As discussed in the Cultural Resources Section in Chapter 2, there are no known archaeological reources within the Area of Direct Impact (ADI).

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

No Impact. There is no indication or reason to believe human remains would be encountered during the project since there are no known cemeteries or burial sites in the project APE. However, the potential does exist to encounter unknown human remains during construction.

3.2.6 ENERGY

CEQA Significance Determinations for Energy

Would the project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

No Impact. The proposed project is a safety project and will not increase capacity on SR 49. During construction, energy use would primarily involve fuel consumption from use of construction equipment and onroad vehicles. This consumption would be temporary in nature and would cease once construction is complete. Indirect energy use such as fuel consumption by vehicles utilizing the roadway would occur. Therefore, the project would not result in a wasteful, inefficient, or unnecessary usage of energy resources during project construction or operation.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact. The project does not conflict with or obstruct state or local plans for renewable energy measures or improving energy efficiency.

3.2.7 GEOLOGY AND SOILS

CEQA Significance Determinations for Geology and Soils

Would the project:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?

No Impact. There are no known active faults in or near the project area according to the California Geological Survey.

ii) Strong seismic ground shaking?

No Impact. The project is located in an area that does not require investigation by the California Geological Survey.

iii) Seismic-related ground failure, including liquefaction?

No Impact. The project is located in an area that was not evaluated for liquefaction by the California Geological Survey. Thus, no impact would occur.

iv) Landslides?

No Impact. The project is located in an area that was not evaluated for landslides by the California Geological Survey. Thus, no impact would occur.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. Construction BMPs would minimize erosion and loss of topsoil from road grading and construction activities. Thus, the impact would be less than significant.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

No Impact. The project is not located on a geologic unit or soil that is unstable or would become unstable as a result of the project according to the California Geological Survey. No impact would occur.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

No Impact. Soils compaction or expansion coefficient will be determined in the final geotechnical study and used to determine compaction requirements set in the construction standards. No substantial risk to life or property is anticipated.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. The project would not include a septic system or alternative wastewater disposal systems. There would be no impact.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact. Placer County is underlain by Quaternary alluvium and metavolcanics rock which have the extremely low potential to contain fossils; therefore, no impacts are anticipated. However, compliance with Caltrans' BMPs and standard measures would protect paleontological resources during ground-disturbing activities. Section 14-7 PALEONTOLOGICAL RESOURCES of the 2018 Standard Specifications instruct Caltrans' construction contractors regarding actions taken when unanticipated paleontological resources are encountered during construction.

3.2.8 GREENHOUSE GAS EMISSIONS

CEQA Significance Determinations for Greenhouse Gas Emissions

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact. Greenhouse emissions for both the opening and the design years, would not be expected to increase from the build alternatives in comparison with the no-build alternative except the southbound during the design year. This change could be attributed to the substantially projected change in VMT. However, the overall level of greenhouse gas emissions during the future years would decrease in comparison with that during the baseline year. Project Operation is not anticipated to generate additional greenhouse gas emissions because the project would not add travel lanes or increase the capacity of the roadway. Temporary emissions will occur during construction due to construction equipment and traveling vehicles waiting for traffic control. With implementation of construction greenhouse-reduction measures, the impact would be less than significant.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact. The proposed project does not conflict with plans, policies or regulations intended to reduce greenhouse gas emissions.

3.2.9 HAZARDS AND HAZARDOUS MATERIALS

CEQA Significance Determinations for Hazards and Hazardous Materials

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact. It is anticipated this project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. If soil is to be removed from site, an ADL survey will need to be conducted. Based on the results, hazardous waste can be produced. However, it will be handled, transported, and disposed of properly.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

No Impact. Standard specifications for removal and handling of known hazardous materials such as treated wood waste, Aerially Deposited Lead (ADL) and yellow traffic striping will minimize the chances of accidental release into the environment.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. No schools exist within a one-quarter mile of the proposed project site.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. There are no Cortese Sites located within the project area.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact. There are no airports within two miles of the project area and no aspect of the proposed project would result in a safety hazard for people residing or working in the project area.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. SR-49 is identified as an evacuation route. Traffic management plans finalized in later design stages of the project include provisions to allow evacuation efforts to be conducted in coordination with the California Highway Patrol and local emergency response personnel.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

No Impact. The proposed project would not exacerbate existing risks associated with wildfire caused by highway users. Standard construction specifications for equipment idling and fuel storage during construction are intended to minimize the risk associated with their use.

3.2.10 HYDROLOGY AND WATER QUALITY

CEQA Significance Determinations for Hydrology and Water Quality

Would the project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less Than Significant Impact. It is anticipated that the project will be regulated under the Construction General Permit (CGP). Compliance with the CGP will require a risk level analysis based on the project's potential erosion and transport to receiving waters. Analysis results will be utilized to determine standard water quality protection measures that will be implemented in order to avoid surface and ground water quality degradation. It is anticipated that BMP usage, placement, field implementation and effectiveness will be monitored, adjusted, and modified (accordingly) for the duration of the project. Compliance with all applicable NPDES Permits, in addition to coordination with the Regional Water Quality Board, is anticipated to ensure the protection of water resources in the area.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less Than Significant Impact. The intended use of the facility and potential pollutants that will be encountered in storm water runoff, after the project is constructed, is not anticipated to change from its current condition. The groundwater elevation within this corridor historically fluctuates but is not anticipated to impact the storm water treatment measures to be implemented. Additionally, due to excavation occurring on a temporary and short-term basis, during the construction period, groundwater resources should not be affected, and it is not anticipated that the project would negatively impact regional sustainable groundwater management (within the project vicinity).

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in substantial erosion or siltation on- or off-site;

Less Than Significant Impact. Standard construction erosion control measures will be utilized to avoid erosion and siltation for the duration of project activities. BMP measures and implementation strategies will be outlined in the Contractor prepared and Caltrans approved SWPPP. These will likely include temporary soil stabilization measures, linear sediment barriers (i.e. silt fence, gravel bag berms, fiber rolls), and construction site waste management (i.e. concrete washout, construction materials storage, litter/ waste management) among other approved controls.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

Less Than Significant Impact. It is anticipated that drainage system design will focus on perpetuating existing highway drainage conditions to the greatest extent feasible. New drainage features will be designed to perpetuate flow in the existing direction and will have similar or greater capacity than what currently exists (in support of current design standards).

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

Less Than Significant Impact. Drainage appurtenances, within the project limits, will be designed to accommodate the anticipated change in flow. Treatment BMPs will be incorporated into the project design, where applicable and feasible, to treat the new impervious area anticipated for the project. The implementation of BPMs meant to treat general pollutants will be evaluated and an analysis of site characteristics to optimize water quality volume/water quality flow and maximize site perviousness will be performed.

iv) Impede or redirect flood flows?

Less Than Significant Impact. It is anticipated that the site characteristics, pertaining to final drainage flow and functionality, will remain (in large part) similar to what currently occurs and exists. Preliminary analyses indicate that no significant impact to the floodplain or base flood elevations for the surrounding system would occur; however, a more detailed examination of the field parameters are pending and will be discussed in the accompanying project Drainage Report.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less Than Significant Impact. The project is located within Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Number 06061C0755H. Most of the project area lies within a FEMA designated Area of Minimal Flooding (Zone X). However, a portion of the project area, around Orr Creek, lies within a floodplain designation by FEMA as a Special Flood Hazard Area Zone A. “Zone A” is defined as areas within the floodplain of 1% annual change floodplain (100-year flood). The proposed project would not cause a significant change to the 100-year floodplain. No significant floodplain encroachment would occur.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant Impact. Temporary and permanent impacts to local water quality basin and groundwater management plans will be minimized and/or avoided through the use of Best Management Practices and compliance with Caltrans’ NPDES Permit.

3.2.11 LAND USE AND PLANNING

CEQA Significance Determinations for Land Use and Planning

Would the project:

a) Physically divide an established community?

Less Than Significant Impact.. The project would stay on the existing alignment and would not change the character of the study area because it would neither alter zoning, nor provide access to areas that are currently undeveloped.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact. With the exception of the conversion of land to transportation uses and the use of land for construction purposes, no substantial change in land use or underlying zoning designation within the study area would occur as a result of implementing the proposed project. The project is consistent with local plans and policies, and land uses.

3.2.12 MINERAL RESOURCES

CEQA Significance Determinations for Mineral Resources

Would this project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. There are no designated mineral resources areas in the project area or vicinity.

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. There are no designated mineral resources areas in the project area or vicinity.

3.2.13 NOISE

CEQA Significance Determinations for Noise

Would the project result in:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant. This project is considered a Type III project and is not required to complete a noise analysis. However, construction noise would be short-term, no adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 14.8-02, "Noise Control". Specification for noise to be restricted between 9 PM and 6 AM from exceeding 86 decibels at 50 feet from the job site will be applied to the project contract to minimize potential noise-related impacts.

b) Generation of excessive groundborne vibration or groundborne noise levels?

No Impact. Noise levels and groundborne vibration resulting from construction activities are not expected to be excessive.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The proposed project is not located within the vicinity of a private airstrip or an airport land use, nor within two miles of a public airport or public use airport.

3.2.14 POPULATION AND HOUSING

CEQA Significance Determinations for Population and Housing

Would the project:

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The proposed project would does not increase capacity or access; therefore, the proposed project would not directly or indirectly induce population growth in the area. The project would not add new homes or businesses and would not extend any roads or other infrastructure.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Less Than Significant Impact. Displacements resulting from the proposed project would not be enough to cause changes to the regional population due to the relatively small number of relocations required and there are sufficient replacement properties in the study area. Therefore, impacts would be less than significant.

3.2.15 PUBLIC SERVICES

CEQA Significance Determinations for Public Services

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?

Police protection?

Less Than Significant Impact. The project would not result in direct impacts on fire, police or other public, and is not anticipated to adversely affect response time for emergency services.

During construction, there may be temporary disruptions along SR 49 from shifting traffic or construction equipment. Traffic would be shifted to allow continued two-way operation of SR 49, as described in the traffic management plan. Any required closures would be coordinated with emergency service providers so as not to hinder emergency responses

Schools?

No Impact. There are no schools within the proximity of the project alignment.

Parks?

No Impact There are no parks within the proximity of the project alignment.

Other public facilities?

No Impact. There are no other public facilities within the proximity of the project alignment.

3.2.16 RECREATION

CEQA Significance Determinations for Recreation

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. The proposed project is not located near any park or recreational facilities; therefore, there would be no effects on parks or recreational facility resources.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. The proposed project is not located near any park or recreational facilities; therefore, there would be no effects on parks or recreational facility resources.

3.2.17 TRANSPORTATION

CEQA Significance Determinations for Transportation

Would the project:

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

No Impact. The project does not conflict with plans, ordinances or policy addressing transportation alternatives.

b) Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less Than Significant Impact. The proposed project is a safety project and will not increase vehicular capacity. Compared to base year (2016) conditions, horizon year (2044) conditions would have 24 percent more daily VMT. However, due to the proposed project installation of the median barrier, daily VMT would increase slightly (less than 0.01 percent on a regional basis and less than 0.2 percent on a corridor basis) due to out-of-direction travel.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. No incompatible uses or hazardous design features are associated with operation of the proposed project. The project would construct a 1.3-mile median barrier of SR 49 and improve intersection operations and safety along this segment of the highway.

d) Result in inadequate emergency access?

Less Than Significant Impact. The project would construct a 1.3-mile median barrier of SR 49 and improve intersection operations. Thus operationally, the project would improve emergency access. Temporary construction impacts could have the potential to impact emergency access during construction. However, a traffic control plan would provide continuous emergency access throughout construction. Thus, the temporary impact would be less than significant.

3.2.18 TRIBAL CULTURAL RESOURCES

CEQA Significance Determinations for Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

A records and literature search of the files at the North Central Information Center (NCIC) of the *California Historical Resources Information System* was conducted and included documentation of known archaeological sites, prior investigations, historic landmarks, historic markers, as well as any properties listed in the National Register of Historic Places and California Register of Historical Resources within the project area. Specifically, the following documents and references were examined as part of this search: *National Register of Historic Places* - listed and/or eligible properties.

Initial consultation occurred in October 2019 with a request sent to the Native American Heritage Commission (NAHC) for a Sacred Lands search and list of tribal contacts. A letter was received November 1, 2019 from the NAHC stating that the search was positive for sacred lands and to contact United Auburn Indian Community (UAIC). Consultation with UAIC did not result in any sacred lands being within the project area. The NAHC also provided a list of tribal contacts including UAIC, Tsi akim Maidu, Shingle Springs Band of Miwok Indians, and the Colfax-Todds Valley Consolidated Tribe. Initial consultation letters were sent to three different tribes on November 14, 2019. Responses were received from all three of the tribes, UAIC, Shingle Springs and the Colfax-Todds. The Tsi Akim Maidu did not respond. A field review with representatives from UAIC was held on March 10th, 2020 and another field review with a representative from the Colfax-Todds was held on September 3rd, 2020.

As a result of the cultural resource inventory, one prehistoric archaeological site was identified in the project area, however, the XPI excavations confirmed the site does not extend into the projects ADI and thus will be protected in its entirety through the establishment of an ESA.

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

No Impact. A cultural resource was identified within the project limit. An XPI excavation was conducted on the cultural resource and it was confirmed to not extend into the projects ADI and will be protected in its entirety through the establishment of an ESA. Thus, no impact would occur.

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

No Impact. Consultation with Native American tribes and individuals determined there are no Tribal Cultural Resources within the ADI.

3.2.19 UTILITIES AND SERVICE SYSTEMS

CEQA Significance Determinations for Utilities and Service Systems

Would the project:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less Than Significant Impact. The proposed project would require relocation of electrical power and telecommunications utility poles, this would be a temporary disruption of service and all utilities would be notified in advance.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

No Impact. The project would not require any water during operation. During construction, water would only be used for dust control along the project corridor. Due to the minimal amount of water that would be required for dust control, the impact on the existing water supply would be less than significant

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less Than Significant Impact. No wastewater would be generated by the project. If dewatering is necessary in areas where groundwater is encountered, depending on surface and groundwater levels at the time of construction, a permit for discharge of extracted groundwater would be obtained from the RWQCB. This discharge shall be consistent with RWQCB requirement and as such would not result in a violation of water quality standards or waste discharge requirements.

d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less Than Significant Impact. Construction of the proposed project would generate some waste material. The amount of construction related waste would not be substantial, be limited to the construction period and would not result in substantial reduction in the capacity of a landfill. Asphalt, concrete, trenching spoils and other excavated material would be reused on-site to the greatest extent feasible.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact. The project would comply with all federal, State, and local statutes and regulations related to solid waste.

3.2.20 WILDFIRE

CEQA Significance Determinations for Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact. The proposed project includes a Traffic Management Plan which takes into account emergency response actions and evacuations that may be required to occur through the construction areas, including during temporary closures. Coordination with California Highway Patrol and local emergency response agencies is included in the Traffic Management Plan to avoid impairment of any response or evacuation.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact. The proposed project would not exacerbate wildfire risks due to slope, prevailing winds and other factors.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact. The proposed project would provide wider shoulders and require utility relocation along an existing roadway corridor. No additional water sources would be required.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact. The project will incorporate materials that provide slope stability and prevent downstream exposure to runoff. The drainage features of the proposed alignment will not change the receiving waters.

3.2.21 MANDATORY FINDINGS OF SIGNIFICANCE

CEQA Significance Determinations for Mandatory Findings of Significance

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant Impact. The proposed project does not have to potential to substantially degrade animal, plant species or communities. Nor does it have the potential to eliminate important examples of California rich history. The small wetland removed does not contain any special status species. The department will purchase mitigation credits for the wetland impacts, however this does not mean that the take of the wetland is an adverse effect, rather the mitigation credits are to satisfy agency requirements.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

No Impact. No cumulative impacts have been identified for the proposed project.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact. No substantial effects from the proposed project on the human environmental have been identified.

3.3 Wildfire

Regulatory Setting

Senate Bill 1241 required the Office of Planning and Research, the Natural Resources Agency, and the California Department of Forestry and Fire Protection to develop amendments to the "CEQA Checklist" for the inclusion of questions related to fire hazard impacts for projects located on lands classified as very high fire hazard severity zones. The 2018 updates to the CEQA Guidelines expanded this to include projects "near" these very high fire hazard severity zones.

Affected Environment

There is potential for wildland fires in the region given the relatively dry summer climate, with hot days and wind. The project site is located in a Moderate Fire Hazard Severity Zone and is classified as being under the State Responsibility Area according to CalFire's Fire Hazard Severity Zone mapping tool (https://egis.fire.ca.gov/FHSZ/). The project is not anticipated to exacerbate wildfire risks because it would be constructed on the existing alignment and no new infrastructure development proposed.

Environmental Consequences

The project would implement a traffic control plan which would keep lanes open for emergency access and/or evacuation at all times in the event of a wildfire in the region. After construction, the provision of additional lanes would provide enhanced emergency access and/or evacuation.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans standard specifications inherently include safety measures which would indirectly result in minimization of wildfire risk from construction activities. Features of the project which contribute to resilience to wildfire include metal sign posts, cement drainage structures and cleared vegetation.

3.4 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity, including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), and various hydrofluorocarbons (HFCs). CO_2 is the most abundant GHG; while it is a naturally occurring component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated CO_2.

Two terms are typically used when discussing how we address the impacts of climate change: "greenhouse gas mitigation" and "adaptation." Greenhouse gas mitigation covers the activities and policies aimed at reducing GHG emissions to limit or "mitigate" the impacts of climate change. Adaptation, on the other hand, is concerned with planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels). This analysis will include a discussion of both.

REGULATORY SETTING

This section outlines federal and state efforts to comprehensively reduce GHG emissions from transportation sources.

Federal

To date, no national standards have been established for nationwide mobile-source GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level.

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. FHWA therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices (FHWA 2019). This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—"the triple bottom line of sustainability" (FHWA n.d.). Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 USC Section 6201) and Corporate Average Fuel Economy (CAFE) Standards. This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the CAFE program based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

Energy Policy Act of 2005, 109th Congress H.R.6 (2005–2006): This act sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) the establishment of the Office of Indian Energy Policy and Programs within the Department of Energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

The U.S. EPA in conjunction with the National Highway Traffic Safety Administration (NHTSA) is responsible for setting GHG emission standards for new cars and light-duty vehicles to significantly increase the fuel economy of all new passenger cars and light trucks sold in the United States. Fuel efficiency standards directly influence GHG emissions.

State

California has been innovative and proactive in addressing GHG emissions and climate change by passing multiple Senate and Assembly bills and executive orders (EOs) including, but not limited to, the following:

EO S-3-05 (June 1, 2005): The goal of this EO is to reduce California's GHG emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill (AB) 32 in 2006 and Senate Bill (SB) 32 in 2016.

Assembly Bill (AB) 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 GHG emissions reduction goals outlined in EO S-3-05, while further mandating that the California Air Resources Board (ARB) create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020 (Health and Safety Code [H&SC] Section 38551(b)). The law requires ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

EO S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard (LCFS) for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. ARB re-adopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the governor's 2030 and 2050 GHG reduction goals.

Senate Bill (SB) 375, Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires ARB to set regional emissions reduction targets for passenger vehicles.

The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan how it will achieve the emissions target for its region.

SB 391, Chapter 585, 2009, California Transportation Plan: This bill requires the State's long-range transportation plan to identify strategies to address California's climate change goals under AB 32.

EO B-16-12 (March 2012) orders State entities under the direction of the Governor, including ARB, the California Energy Commission, and the Public Utilities Commission, to support the rapid commercialization of zero-emission vehicles. It directs these entities to achieve various benchmarks related to zero-emission vehicles.

EO B-30-15 (April 2015) establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent ($MMTCO_2e$).[5] Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, *Safeguarding California*, every 3 years, and to ensure that its provisions are fully implemented.

SB 32, Chapter 249, 2016, codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

SB 1386, Chapter 545, 2016, declared "it to be the policy of the state that the protection and management of natural and working lands … is an important strategy in meeting the state's greenhouse gas reduction goals, and would require all state agencies, departments, boards, and commissions to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands."

AB 134, Chapter 254, 2017, allocates Greenhouse Gas Reduction Funds and other sources to various clean vehicle programs, demonstration/pilot projects, clean vehicle rebates and projects, and other emissions-reduction programs statewide.

SB 743**,** Chapter 386 (September 2013): This bill changes the metric of consideration for transportation impacts pursuant to CEQA from a focus on automobile delay to alternative methods focused on vehicle miles travelled, to promote the state's goals of reducing greenhouse gas emissions and traffic related air pollution and promoting multimodal transportation while balancing the needs of congestion management and safety.

[5] GHGs differ in how much heat each trap in the atmosphere (global warming potential, or GWP). CO_2 is the most important GHG, so amounts of other gases are expressed relative to CO_2, using a metric called "carbon dioxide equivalent" (CO_2e). The global warming potential of CO_2 is assigned a value of 1, and the GWP of other gases is assessed as multiples of CO_2.

SB 150**,** Chapter 150, 2017, Regional Transportation Plans: This bill requires ARB to prepare a report that assesses progress made by each metropolitan planning organization in meeting their established regional greenhouse gas emission reduction targets.

EO B-55-18 (September 2018) sets a new statewide goal to achieve and maintain carbon neutrality no later than 2045. This goal is in addition to existing statewide targets of reducing GHG emissions.

EO N-19-19 (September 2019) advances California's climate goals in part by directing the California State Transportation Agency to leverage annual transportation spending to reverse the trend of increased fuel consumption and reduce GHG emissions from the transportation sector. It orders a focus on transportation investments near housing, managing congestion, and encouraging alternatives to driving. This EO also directs ARB to encourage automakers to produce more clean vehicles, formulate ways to help Californians purchase them, and propose strategies to increase demand for zero-emission vehicles.

ENVIRONMENTAL SETTING

The proposed project is in a rural area, with a primarily natural-resources based agricultural and tourism economy. SR-49 is the main transportation route to and through the area for both passenger and commercial vehicles. The nearest alternate route is I-80, 6 miles to the south. Traffic counts are low, and SR-49 is rarely congested; traffic delays are caused primarily by accidents. No railroad tracks run parallel or intersect the project limits. The Placer Regional Transportation Agency and the Sacramento Area Council of Governments (SACOG) guide in transportation development within the project area. The Placer County General Plan Circulation, Safety, and Traffic elements address GHGs in the project area.

A GHG emissions inventory estimates the amount of GHGs discharged into the atmosphere by specific sources over a period of time, such as a calendar year. Tracking annual GHG emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals. U.S. EPA is responsible for documenting GHG emissions nationwide, and the ARB does so for the state, as required by H&SC Section 39607.4.

National GHG Inventory

The U.S. EPA prepares a national GHG inventory every year and submits it to the United Nations in accordance with the Framework Convention on Climate Change. The inventory provides a comprehensive accounting of all human-produced sources of GHGs in the United States, reporting emissions of CO_2, CH_4, N_2O, HFCs, perfluorocarbons, SF_6, and nitrogen trifluoride. It also accounts for emissions of CO_2 that are removed from the atmosphere by "sinks" such as forests, vegetation, and soils that uptake and store CO_2 (carbon sequestration). The 1990–2016 inventory found that of 6,511 $MMTCO_2e$ GHG emissions in 2016, 81% consist of CO_2, 10% are CH_4, and 6% are N_2O; the balance consists of fluorinated gases (EPA 2018a). In 2016, GHG emissions from the transportation sector accounted for nearly 28.5% of U.S. GHG emissions.

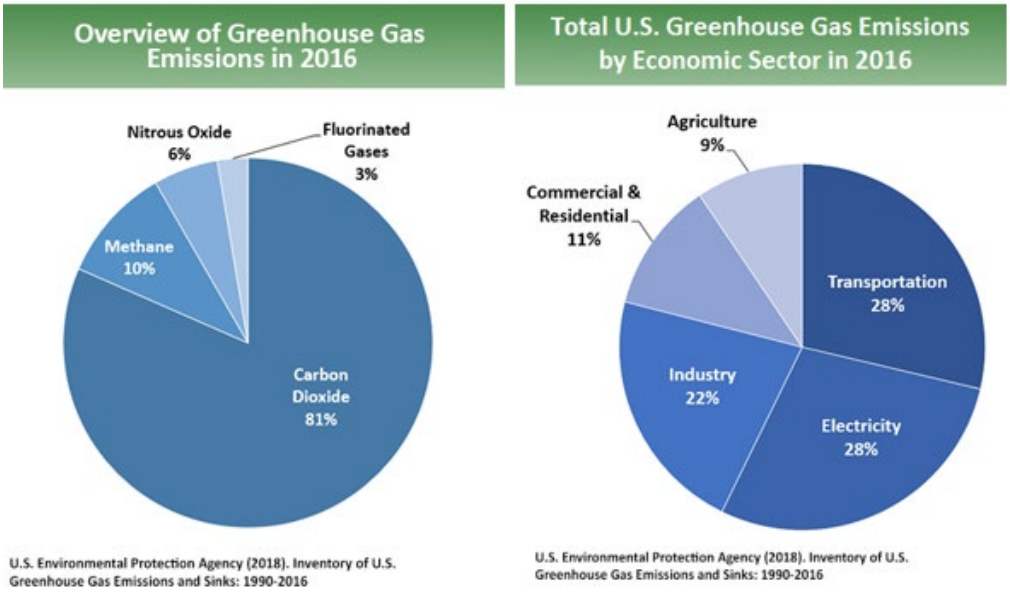


Figure 8. U.S. 2016 Greenhouse Gas Emissions

State GHG Inventory

ARB collects GHG emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state's progress in meeting its GHG reduction goals. The 2019 edition of the GHG emissions inventory found total California emissions of 424.1 $MMTCO_2e$ for 2017, with the transportation sector responsible for 41% of total GHGs. It also found that overall statewide GHG emissions declined from 2000 to 2017 despite growth in population and state economic output (ARB 2019a).

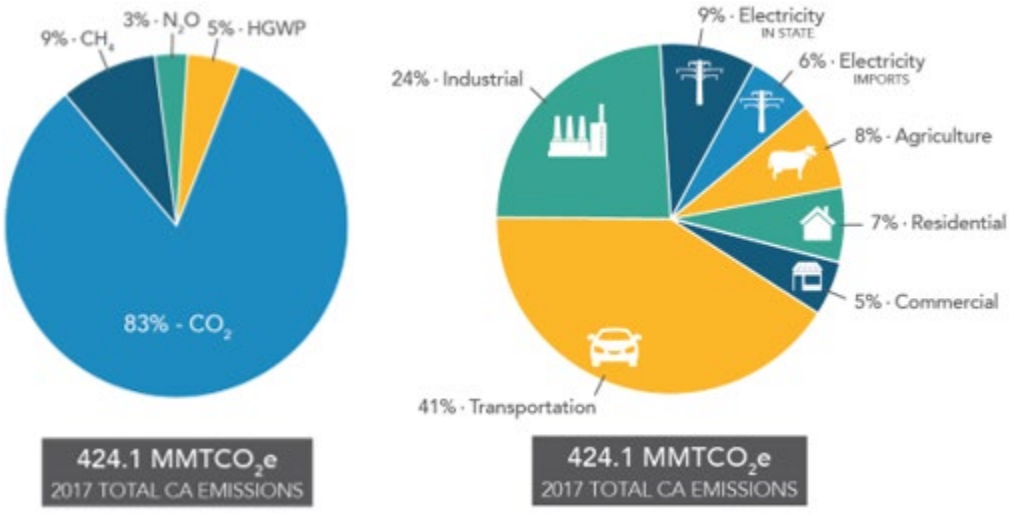


Figure 9. California 2017 Greenhouse Gas Emissions

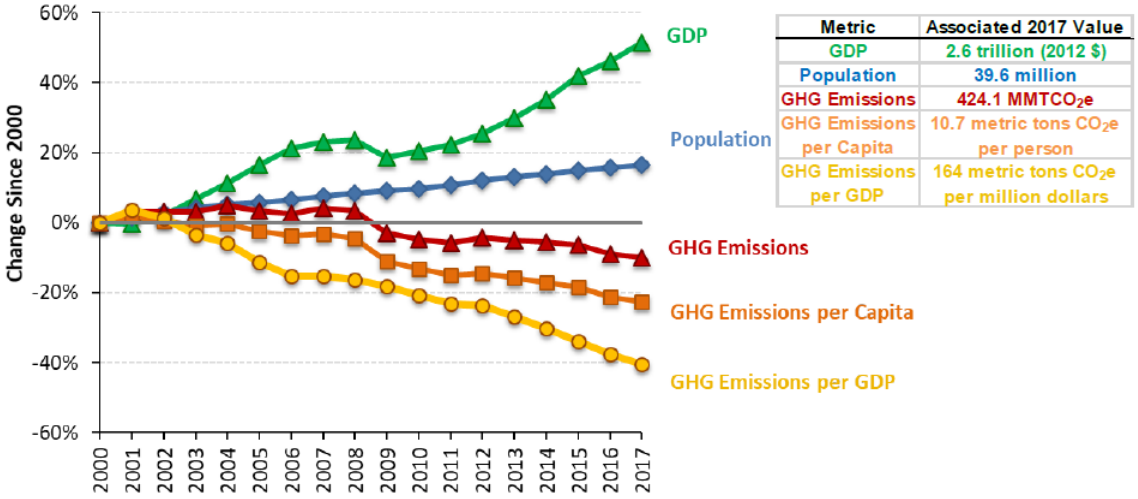


Figure 10. Change in California GDP, Population, and GHG Emissions since 2000 (*Source*: ARB 2019b)

AB 32 required ARB to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing GHG emissions to 1990 levels by 2020, and to update it every 5 years. ARB adopted the first scoping plan in 2008. The second updated plan, *California's 2017 Climate Change Scoping Plan*, adopted on December 14, 2017, reflects the 2030 target established in EO B-30-15 and SB 32. The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions.

Regional Plans

ARB sets regional targets for California's 18 MPOs to use in their Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) to plan future projects that will cumulatively achieve GHG reduction goals. Targets are set at a percent reduction of passenger vehicle GHG emissions per person from 2005 levels. The proposed project is included in Sacramento Area Council of Governments (SACOG)'s Metropolitan Transportation Improvement Program (MTIP) and the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) which was adopted November 2019.The regional reduction target for SACOG are 7 percent by 2020 and 19 percent by 2035.

Placer County has its own Regional Transportation Planning Agency (RTPA) that is responsible for developing its own transportation plans. The Placer County Transportation Planning Agency's (PCTPA) two most recent RTPs are incorporated into SACOG's regional planning processes through the SACOG MTP.

The following SACOG MTP/SCS policies and supporting actions apply to the project:

> POLICY 20: Prioritize cost effective safety improvements that will help the region eliminate fatal transportation related accidents.

POLICY 22: Invest in bicycle and pedestrian infrastructure to encourage healthy, active transportation trips and provide recreational opportunities for residents and visitors.

Placer County has adopted the Placer County Sustainability Plan (PCSP), A Greenhouse Gas Emission Reduction Plan and Adaptation Strategy. The PCSP sets emission reduction targets for community-wide emissions of 6.0 $MTCO_2e$ per person by 2030 and 2.0 $MTCO_2e$ per person by 2050. The PCSP identifies 67 local strategies to reduce community-wide emissions and 46 strategies to reduce government operations emissions. The following voluntary community-wide PCSP strategies are relevant to the project:

Strategy T-5: Partner with incorporated communities and regional agencies to develop bikeways and trails between communities.

Action Item 2: Implement the PCTPA's Placer County Regional Bikeway Plan in coordination with Placer County Transportation Planning Agency, Placer County Department of Public Works, and the TRPA's Linking Tahoe Active Transportation Plan.

Action Item 7: Implement pedestrian and bike safety infrastructure such as signage, traffic controls, and visible street paint.

The following County operations PCSP strategies are relevant to the project:

Strategy GO E-5: Upgrade streetlights and traffic signals to advanced energy efficient bulbs.

PROJECT ANALYSIS

GHG emissions from transportation projects can be divided into those produced during operation of the SHS and those produced during construction. The primary GHGs produced by the transportation sector are CO_2, CH_4, N_2O, and HFCs. CO_2 emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of CH_4 and N_2O are emitted during fuel combustion. In addition, a small amount of HFC emissions are included in the transportation sector.

The CEQA Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change (Pub. Resources Code, § 21083(b)(2)). As the California Supreme Court explained, "because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself." (Cleveland National Forest Foundation *v.* San Diego Assn. of Governments (2017) 3 Cal.5th 497, 512.) In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines Sections 15064(h)(1) and 15130).

To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. Although climate change is ultimately a cumulative impact, not every individual project that emits greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment.

Operational Emissions

The purpose of the proposed project is to improve safety and will not add through-lanes or increase the vehicle capacity of the roadway. Therefore, the operational emissions associated with the proposed project area under the future build alternatives would not be anticipated to increase in comparison with those under the baseline year.

Construction Emissions

Construction GHG emissions would result from material processing, on-site construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

Construction emissions were estimated using the latest Caltrans' Model, CAL-CET2020 (version 1.0.1). The emissions expected to result from construction are anticipated to occur during 2022 through 2024. Construction-related emissions for the proposed project are presented in Table 22 below. Alternative 2 would create the least construction emissions with 982 tons of CO_2; Alternative 3 would create the most with 1,108 tons of CO_2; and Alternative 1 would create 1,024 tons of CO_2.

Table 22. Construction Emissions to Roadways

	Alternative. 1 CO_2 (tons)	Alternative. 2 CO_2 (tons)	Alternative. 3 CO_2 (tons)
Land Clearing/Grubbing	0	0	0
Roadway Excavation/Removal	242	230	263
Structural Excavation/Removal	0	0	0
Base/Subbase/ Imported Borrow	98	97	106
Structure Concrete	0	0	0
Paving	101	101	109
Drainage/Environment/Landscaping	2	2	2
Traffic Signalization/Signage/Striping/Painting	581	552	628
Other Operation	0	0	0
Project Total (US tons)	**1024**	**982**	**1108**

All construction contracts include Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, which require contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all ARB emission reduction regulations; and Section 14-9.02, Air Pollution Control, which requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions.

CEQA Conclusion

While the proposed project will result in GHG emissions during construction, it is anticipated that the project will not result in any increase in operational GHG emissions. The proposed project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. With implementation of construction GHG-reduction measures, the impact would be less than significant.

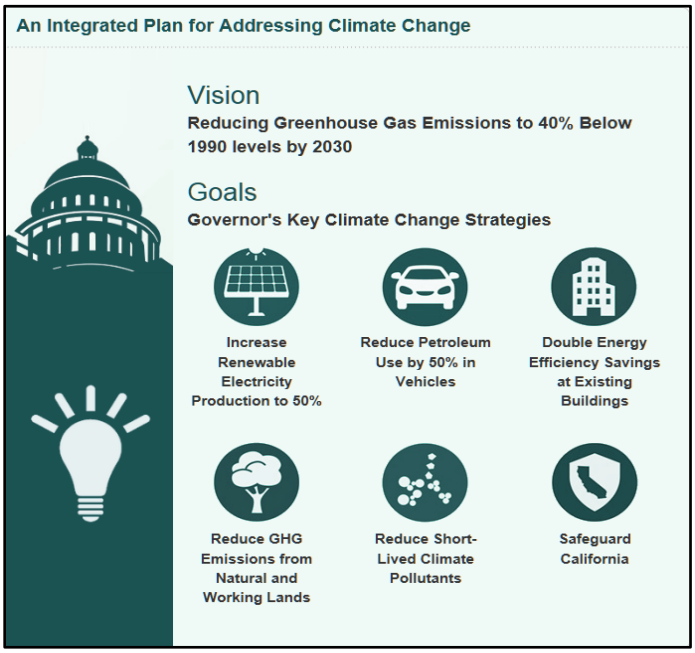
Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

GREENHOUSE GAS REDUCTION STRATEGIES

Statewide Efforts

Major sectors of the California economy, including transportation, will need to reduce emissions to meet the 2030 and 2050 GHG emissions targets. Former Governor Edmund G. Brown promoted GHG reduction goals that involved (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farms and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, *Safeguarding California*.

Figure 11. California Climate Strategy



The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that the state build on past successes in reducing criteria and toxic air pollutants from transportation and goods movement. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled (VMT). A key state goal for reducing GHG emissions is to reduce today's petroleum use in cars and trucks by up to 50 percent by 2030 (State of California 2019).

In addition, SB 1386 (Wolk 2016) established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and vegetation on forests, rangelands, farms, and wetlands remove carbon dioxide from the atmosphere through biological processes and sequester the carbon in above- and below-ground matter.

Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the ARB works to implement EOs S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. EO B-30-15, issued in April 2015, and SB 32 (2016), set an interim target to cut GHG emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

California Transportation Plan (CTP 2040)

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. In 2016, Caltrans completed the *California Transportation Plan 2040*, which establishes a new model for developing ground transportation systems, consistent with CO_2 reduction goals. It serves as an umbrella document for all the other statewide transportation planning documents. Over the next 25 years, California will be working to improve transit and reduce long-run repair and maintenance costs of roadways and developing a comprehensive assessment of climate-related transportation demand management and new technologies rather than continuing to expand capacity on existing roadways.

SB 391 (Liu 2009) requires the CTP to meet California's climate change goals under AB 32. Accordingly, the CTP 2040 identifies the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the state's transportation needs. While MPOs have primary responsibility for identifying land use patterns to help reduce GHG emissions, CTP 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

Caltrans Strategic Management Plan

The Strategic Management Plan, released in 2015, creates a performance-based framework to preserve the environment and reduce GHG emissions, among other goals. Specific performance targets in the plan that will help to reduce GHG emissions include:

- Increasing percentage of non-auto mode share
- Reducing VMT
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) GHG emissions

FUNDING AND TECHNICAL ASSISTANCE PROGRAMS

In addition to developing plans and performance targets to reduce GHG emissions, Caltrans also administers several sustainable transportation planning grants. These grants encourage local and regional multimodal transportation, housing, and land use planning that furthers the region's RTP/SCS; contribute to the State's GHG reduction targets and advance transportation-related GHG emission reduction project types/strategies; and support other climate adaptation goals (e.g., *Safeguarding California*).

CALTRANS POLICY DIRECTIVES AND OTHER INITIATIVES

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. *Caltrans Activities to Address Climate Change* (April 2013) provides a comprehensive overview of Caltrans' statewide activities to reduce GHG emissions resulting from agency operations.

Project-Level GHG Reduction Strategies

The following measures will also be implemented in the project to reduce GHG emissions and potential climate change impacts from the project.

Please note that although these measures are anticipated to reduce construction-related emissions, these reductions cannot be quantified at this time.

- The construction contractor must comply with the Caltrans' Standard Specifications in Section 14-9 (2018). - Section 14-9-02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.

- Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by CA Code of Regulations Title 17, Section 93114.

- Crosswalks, signals, and bike ramps would improve bike and pedestrian travel at intersections to support non-motorized transportation.

ADAPTATION

Reducing GHG emissions is only one part of an approach to addressing climate change. Caltrans must plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and in the frequency and intensity of wildfires. Flooding and erosion can damage or wash out roads; longer periods of intense heat can buckle pavement and railroad tracks; storm surges combined with a rising sea level can inundate highways. Wildfire can directly burn facilities and indirectly cause damage when rain falls on denuded slopes that landslide after a fire. Effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned.

Accordingly, Caltrans must consider these types of climate stressors in how highways are planned, designed, built, operated, and maintained.

Federal Efforts

Under NEPA assignment, Caltrans is obligated to comply with all applicable federal environmental laws and FHWA NEPA regulations, policies, and guidance.

The U.S. Global Change Research Program (USGCRP) delivers a report to Congress and the president every 4 years, in accordance with the Global Change Research Act of 1990 (15 U.S.C. ch. 56A § 2921 et seq). The *Fourth National Climate Assessment*, published in 2018, presents the foundational science and the "human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways." Chapter 12, "Transportation," presents a key discussion of vulnerability assessments. It notes that "asset owners and operators have increasingly conducted more focused studies of particular assets that consider multiple climate hazards and scenarios in the context of asset-specific information, such as design lifetime" (USGCRP 2018).

The U.S. DOT Policy Statement on Climate Adaptation in June 2011 committed the federal Department of Transportation to "integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely, and that transportation infrastructure, services and operations remain effective in current and future climate conditions" (U.S. DOT 2011).

FHWA order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events,* December 15, 2014) established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. FHWA has developed guidance and tools for transportation planning that foster resilience to climate effects and sustainability at the federal, state, and local levels (FHWA 2019).

State Efforts

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. *California's Fourth Climate Change Assessment* (2018) is the state's effort to "translate the state of climate science into useful information for action" in a variety of sectors at both statewide and local scales. It adopts the following key terms used widely in climate change analysis and policy documents:

- *Adaptation* to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
- *Adaptive capacity* is the "combination of the strengths, attributes, and resources available to an individual, community, society, or organization that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities."

- *Exposure* is the presence of people, infrastructure, natural systems, and economic, cultural, and social resources in areas that are subject to harm.
- *Resilience* is the "capacity of any entity – an individual, a community, an organization, or a natural system – to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience". Adaptation actions contribute to increasing resilience, which is a desired outcome or state of being.
- *Sensitivity* is the level to which a species, natural system, or community, government, etc., would be affected by changing climate conditions.
- *Vulnerability* is the "susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt." Vulnerability can increase because of physical (built and environmental), social, political, and/or economic factor(s). These factors include, but are not limited to: ethnicity, class, sexual orientation and identification, national origin, and income inequality. Vulnerability is often defined as the combination of sensitivity and adaptive capacity as affected by the level of exposure to changing climate.

Several key state policies have guided climate change adaptation efforts to date. Recent state publications produced in response to these policies draw on these definitions.

EO S-13-08, issued by then-governor Arnold Schwarzenegger in November 2008, focused on sea-level rise and resulted in the *California Climate Adaptation Strategy* (2009), updated in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan). The Safeguarding California Plan offers policy principles and recommendations and continues to be revised and augmented with sector-specific adaptation strategies, ongoing actions, and next steps for agencies.

EO S-13-08 also led to the publication of a series of sea-level rise assessment reports and associated guidance and policies. These reports formed the foundation of an interim *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance) in 2010, with instructions for how state agencies could incorporate "sea-level rise (SLR) projections into planning and decision making for projects in California" in a consistent way across agencies. The guidance was revised and augmented in 2013. *Rising Seas in California – An Update on Sea-Level Rise Science* was published in 2017 and its updated projections of sea-level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea-Level Rise Guidance Update* in 2018.

EO B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This EO recognizes that effects of climate change other than sea-level rise also threaten California's infrastructure. At the direction of EO B-30-15, the Office of Planning and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies* in 2017, to encourage a uniform and systematic approach. Representatives of Caltrans participated in the multi-agency, multidisciplinary technical advisory group that developed this guidance on how to integrate climate change into planning and investment.

AB 2800 (Quirk 2016) created the multidisciplinary Climate-Safe Infrastructure Working Group, which in 2018 released its report, *Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*. The report provides guidance to agencies on how to address the challenges of assessing risk in the face of inherent uncertainties still posed by the best

available science on climate change. It also examines how state agencies can use infrastructure planning, design, and implementation processes to address the observed and anticipated climate change impacts.

Caltrans Adaptation Efforts

Caltrans Vulnerability Assessments

Caltrans is conducting climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects including precipitation, temperature, wildfire, storm surge, and sea-level rise. The approach to the vulnerability assessments was tailored to the practices of a transportation agency, and involves the following concepts and actions:

- *Exposure* – Identify Caltrans assets exposed to damage or reduced service life from expected future conditions.
- *Consequence* – Determine what might occur to system assets in terms of loss of use or costs of repair.
- *Prioritization* – Develop a method for making capital programming decisions to address identified risks, including considerations of system use and/or timing of expected exposure.

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the vulnerability assessments will guide analysis of at-risk assets and development of adaptation plans to reduce the likelihood of damage to the State Highway System, allowing Caltrans to both reduce the costs of storm damage and to provide and maintain transportation that meets the needs of all Californians.

Project Adaptation Analysis

Sea-Level Rise

The proposed project is outside the coastal zone and not in an area subject to sea-level rise. Accordingly, direct impacts to transportation facilities due to projected sea-level rise are not expected.

Floodplains

Precipitation can affect transportation assets in a variety of ways, such as inundation, washouts, or structural damage from heavy rain. Climate change is expected to bring fewer but more intense rainfall events in California. To help understand future flood risks to California infrastructure, Caltrans analyzed changes in 100-year storm precipitation depth, which is one of the design criteria considered in bridge and culvert design. The vulnerability assessments for each district mapped these changes for 2025, 2055, and 2085 for a high-emissions scenario. The District 3 Climate Vulnerability Assessment maps show the project location could experience up to 9.9% increase in 100-year storm precipitation depth through 2085 (Caltrans 2019).

The project's location hydraulics study concluded that the proposed project would partially encroach on the 100-year floodplain of the North Fork Dry Creek (also known as Orr Creek).

Building the project would increase the amount of impervious surface area, which would increase the amount of runoff water. Post-construction stormwater treatment controls would address both the decrease in infiltration to groundwater that seeps into surface waters and the runoff from impervious surfaces that discharges into nearby waters. Treatment controls would include types that infiltrate, harvest, reuse, and allow the evapotranspiration of stormwater runoff. Accordingly, it is not anticipated that the amount of runoff water created would exceed the capacities of the planned stormwater system.

WILDFIRE

The District 3 Climate Change Vulnerability Assessment mapping of roadways exposed to wildfire concern shows that SR-49 in the project area is considered exposed roadway in an area with a high level of concern for wildfire. CalFire's Fire Hazard Severity Zone mapping tool (https://egis.fire.ca.gov/FHSZ/) shows the project traverses moderate fire hazard severity zones. The project area is within the State Responsibility Area for wildfire, the project is not anticipated to exacerbate the impacts of wildfires intensified by climate change for the following reasons:

- The addition of wider shoulders, and median would increase the width of the road as a firebreak and provide additional areas for emergency response vehicle staging.
- The project would be constructed on the existing alignment, with no new infrastructure development proposed.
- Implementation of Caltrans 2018 revised Standard Specification 7-1.02M(2) during construction, mandating fire prevention procedures including a fire prevention plan, will avoid accidental fire starts during construction.

Chapter 4 – Comments and Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential impacts and avoidance, minimization, and/or mitigation measures and related environmental requirements. Agency and tribal consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including interagency coordination meetings, public meetings, public notices, Project Development Team (PDT) meetings, and Project Development Focus meetings. This chapter summarizes the results of the Department's efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

4.1 Tribal Consultation

Initial consultation occurred in October 2019 with a request sent to the Native American Heritage Commission (NAHC) for a Sacred Lands search and list of tribal contacts. A letter was received November 1, 2019, from the NAHC stating that the search was positive for sacred lands and to contact United Auburn Indian Community (UAIC). Consultation with UAIC did not result in any sacred lands being within the project area. The NAHC also provided a list of tribal contacts including UAIC, Tsi akim Maidu, Shingle Springs Band of Miwok Indians, and the Colfax-Todds Valley Consolidated Tribe.

Initial consultation letters were sent to three different tribes on November 14, 2019. Responses were received from three of the tribes: UAIC, Shingle Springs and the Colfax-Todds. The Tsi Akim Maidu did not respond. A field review with representatives from UAIC was held on March 10, 2020, and another field review with a representative from the Colfax-Todds was held on September 3, 2020.

4.2 Public Coordination

Community Interaction

A Public Open House was held on February 20, 2019, at the DeWitt Center, Placer County. The PDT has reviewed the comments and has taken them in consideration in developing this project.

Public Comment Period

The Initial Study / Environmental Assessment was made available for public and agency review and comment for 30 days from May 19, 2021 – June 17, 2021. Caltrans ensured that the document was made available to all appropriate parties and agenicies, including the following: 1) Responsible agencies, 2) Trustee agencies that have resources affected by the project, 3) other state, federal and local agencies which have regulatory jurisdiction, or that exercise authority over resources which may be affected by the project, 4) public. The document was be made available online at https://dot.ca.gov/caltrans-near-me/district-3/d3-projects/d3-sr-49-safety-barrier. Additional copies of the document were available at the Nevada County Offices, Madelyn Helling Library, Grass Valley Library, Auburn Library, Caltrans District 3 Office, and available to send via postal mail by submitting a request to the project email address.

Public Meeting

In light of the developments regarding COVID-19 and Governor Newsom's guidance regarding public gatherings, the project did not have another in-person public meeting. Instead, a video conference public meeting took place on May 26, 2021 and again on June 2, 2021. The video conference public meeting was utilized to inform the public and solicit comments. Community members were encouraged to submit comments via email, postal mail, and via the project website.

Responses to Public Comments

Copies of the comments and responses to comments are in Appendix H of the IS/EA.

Caltrans thanks all commenters for participating and providing input during the environmental process. Comment letters listed below are being included in the Final EIR/EA and will be considered during completion of the Project Approval/Environmental Document phase of the project.

Chapter 5 – List of Preparers

The following Caltrans District 3 staff contributed to the preparation of this Environmental Impact Report.

Sandeep Sandhu, Associate Environmental Planner. Contribution: Environmental Coordinator and Document Writer

Mike Bartlett, District-3 Office Chief. Contribution: Document Review

Kelly McNally, Environmental Branch Chief. Contribution: Document review

Kelli Angell, Associate Environmental Planner. (Natural Sciences) Contribution: Project Biologist, Natural Environmental Study (NES)

William Larson, Associate Environmental Planner (Archaeology). Contribution: Archaeological Survey Report (ASR), Historic Properties Survey Report (HPSR)

Lisa Bright, District Native American Coordinator. Contribution: Native American Consultation.

Sonia Miller, Associate Environmental Planner (Architectural History). Contribution: Historic Resource Evaluation Report (HRER)

Mark Melani, Transportation Engineer. Contribution: Initial Site Assessment

Saeid Zandian-Jazi, Transportation Engineer. Contribution: Noise Study.

Sean Cross, NPDES Coordinator. Contribution: Water Quality Assessment

Youngil Cho, Transportation Engineer. Contribution: Air Quality Study and Energy Analysis

Marta Martinez, Associate Environmental Coordinator. Contribution: Community Impact Analysis

Clark Townsend, Hydraulics Engineer. Contribution: Floodplain Study

Jonathan Sampson, Landscape Architect. Contribution: Visual Impact Assessment

Samual Vandell, Transportation Engineer. Contribution: Project Manager

Cirilo Salilcan, Transportation Engineer. Contribution: Project Design Seniorr

Cameron Haymore, Transportation Engineer. Contribution: Project Design

Bradley Bowers, Associate Environmental Planner. Contribution: Paleontological Evaluation Report

Brenda Powell-Jones, Senior Environmental Planner. Contribution: Climate Change Policy Advisor, GHG Reviewer.

Chapter 6 – Distribution List

The State Clearinghouse distributed copies of this document to reviewing agencies. In addition, copies were sent to:

Caltrans District 3 Office

Auburn Library

Grass Valley Library

Madelyn Helling Library

Nevada County Offices (Main Lobby)

APPENDICES

Appendix A. Section 4(f)

Resources Evaluated Relative to the Requirements of Section 4(f): No-Use Determination(s)

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 United States Code (USC) 303, declares that "it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

This section of the document discusses parks, recreational facilities, wildlife refuges, and historic properties found within or next to the project area that do not trigger Section 4(f) protection because: 1) they are not publicly owned, 2) they are not open to the public, 3) they are not eligible historic properties, or 4) the project does not permanently use the property and does not hinder the preservation of the property.

The property is a Section 4(f) property, but no "use" will occur. Therefore, the provisions of Section 4(f) do not apply.

Appendix B. Title VI Policy Statement

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY Gavin Newsom, Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-6130
FAX (916) 653-5776
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

November 2019

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964, ensures "*No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.*"

Related federal statutes, remedies, and state law further those protections to include sex, disability, religion, sexual orientation, and age.

For information or guidance on how to file a complaint, or obtain more information regarding Title VI, please contact the Title VI Branch Manager at (916) 324-8379 or visit the following web page: https://dot.ca.gov/programs/business-and-economic-opportunity/title-vi.

To obtain this information in an alternate format such as Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, at 1823 14th Street, MS-79, Sacramento, CA 95811; (916) 324-8379 (TTY 711); or at Title.VI@dot.ca.gov.

Toks Omishakin
Director

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

Appendix C. California Department of Transportation Relocation Assistance Program

RELOCATION ASSISTANCE ADVISORY SERVICES

DECLARATION OF POLICY

"The purpose of this title is to establish a ***uniform policy for fair and equitable treatment*** of persons displaced as a result of federal and federally assisted programs in order that such persons ***shall not suffer disproportionate injuries*** as a result of programs designed for the benefit of the public as a whole."

The Fifth Amendment to the U.S. Constitution states, "No Person shall…be deprived of life, liberty, or property, without due process of law, nor shall private property be taken for public use without just compensation." The Uniform Act sets forth in statute the due process that must be followed in Real Property acquisitions involving federal funds. Supplementing the Uniform Act is the government-wide single rule for all agencies to follow, set forth in 49 Code of Federal Regulations (CFR) Part 24. Displaced individuals, families, businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and financial benefits, as discussed below.

FAIR HOUSING

The Fair Housing Law (Title VIII of the Civil Rights Act of 1968) sets forth the policy of the United States to provide, within constitutional limitations, for fair housing. This act, and as amended, makes discriminatory practices in the purchase and rental of most residential units illegal. Whenever possible, minority persons shall be given reasonable opportunities to relocate to any available housing regardless of neighborhood, as long as the replacement dwellings are decent, safe, and sanitary and are within their financial means. This policy, however, does not require the Department to provide a person a larger payment than is necessary to enable a person to relocate to a comparable replacement dwelling.

Any persons to be displaced will be assigned to a relocation advisor, who will work closely with each displacee in order to see that all payments and benefits are fully utilized and that all regulations are observed, thereby avoiding the possibility of displacees jeopardizing or forfeiting any of their benefits or payments. At the time of the initiation of negotiations (usually the first written offer to purchase), owner-occupants are given a detailed explanation of the state's relocation services. Tenant occupants of properties to be acquired are contacted soon after the initiation of negotiations and also are given a detailed explanation of the Caltrans Relocation Assistance Program. To avoid loss of possible benefits, no individual, family, business, farm, or nonprofit organization should commit to purchase or rent a replacement property without first contacting a Department relocation advisor.

RELOCATION ASSISTANCE ADVISORY SERVICES

In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, the Department will provide relocation advisory assistance to any person, business, farm, or nonprofit organization displaced as a result of the acquisition of real property for public use, so long as they are legally present in the United States. The Department will assist eligible displacees in obtaining comparable replacement housing by providing current and continuing information on the availability and prices of both houses for

sale and rental units that are "decent, safe, and sanitary." Nonresidential displacees will receive information on comparable properties for lease or purchase (for business, farm, and nonprofit organization relocation services, see below).

Residential replacement dwellings will be in a location generally not less desirable than the displacement neighborhood at prices or rents within the financial ability of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, comparable replacement dwellings will be offered to displacees that are open to all persons regardless of race, color, religion, sex, national origin, and consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance will also include the supplying of information concerning federal and state assisted housing programs and any other known services being offered by public and private agencies in the area.

Persons who are eligible for relocation payments and who are legally occupying the property required for the project will not be asked to move without first being given at least 90 days written notice. Residential occupants eligible for relocation payment(s) will not be required to move unless at least one comparable "decent, safe, and sanitary" replacement dwelling, available on the market, is offered to them by the Department.

RESIDENTIAL RELOCATION FINANCIAL BENEFITS

The Relocation Assistance Program will help eligible residential occupants by paying certain costs and expenses. These costs are limited to those necessary for or incidental to the purchase or rental of a replacement dwelling and actual reasonable moving expenses to a new location within 50 miles of the displacement property. Any actual moving costs in excess of the 50 miles are the responsibility of the displacee. The Residential Relocation Assistance Program can be summarized as follows:

Moving Costs
Any displaced person, who lawfully occupied the acquired property, regardless of the length of occupancy in the property acquired, will be eligible for reimbursement of moving costs. Displacees will receive either the actual reasonable costs involved in moving themselves and personal property up to a maximum of 50 miles, or a fixed payment based on a fixed moving cost schedule. Lawful occupants who move into the displacement property after the initiation of negotiations must wait until the Department obtains control of the property in order to be eligible for relocation payments.

Purchase Differential
In addition to moving and related expense payments, fully eligible homeowners may be entitled to payments for increased costs of replacement housing.

Homeowners who have owned and occupied their property for 90 days or more prior to the date of the initiation of negotiations (usually the first written offer to purchase the property), may qualify to receive a price differential payment and may qualify to receive reimbursement for certain nonrecurring costs incidental to the purchase of the replacement property. An interest differential payment is also available if the interest rate for the loan on the replacement dwelling is higher than the loan rate on the displacement dwelling, subject to certain limitations on reimbursement based upon the replacement property interest rate.

Rent Differential
Tenants and certain owner-occupants (based on length of ownership) who have occupied the property to be acquired by the Department prior to the date of the initiation of negotiations may

qualify to receive a rent differential payment. This payment is made when the Department determines that the cost to rent a comparable "decent, safe, and sanitary" replacement dwelling will be more than the present rent of the displacement dwelling. As an alternative, the tenant may qualify for a down payment benefit designed to assist in the purchase of a replacement property and the payment of certain costs incidental to the purchase, subject to certain limitations noted under the *Down Payment* section below. To receive any relocation benefits, the displaced person must buy or rent and occupy a "decent, safe and sanitary" replacement dwelling within one year from the date the Department takes legal possession of the property, or from the date the displacee vacates the displacement property, whichever is later.

Down Payment
The down payment option has been designed to aid owner-occupants of less than 90 days and tenants in legal occupancy prior to the Department's initiation of negotiations. The one-year eligibility period in which to purchase and occupy a "decent, safe and sanitary" replacement dwelling will apply.

Last Resort Housing
Federal regulations (49 CFR 24) contain the policy and procedure for implementing the Last Resort Housing Program on Federal-aid projects. Last Resort Housing benefits are, except for the amounts of payments and the methods in making them, the same as those benefits for standard residential relocation as explained above. Last Resort Housing has been designed primarily to cover situations where a displacee cannot be relocated because of lack of available comparable replacement housing, or when the anticipated replacement housing payments exceed the limits of the standard relocation procedure, because either the displacee lacks the financial ability or other valid circumstances.

After the initiation of negotiations, the Department will within a reasonable length of time, personally contact the displacees to gather important information, including the following:

- Number of people to be displaced.
- Specific arrangements needed to accommodate any family member(s) with special needs.
- Financial ability to relocate into comparable replacement dwelling which will adequately house all members of the family.
- Preferences in area of relocation.
- Location of employment or school.

NONRESIDENTIAL RELOCATION ASSISTANCE

The Nonresidential Relocation Assistance Program provides assistance to businesses, farms and nonprofit organizations in locating suitable replacement property, and reimbursement for certain costs involved in relocation. The Relocation Advisory Assistance Program will provide current lists of properties offered for sale or rent, suitable for a particular business's specific relocation needs. The types of payments available to eligible businesses, farms, and nonprofit organizations are: searching and moving expenses, and possibly reestablishment expenses; or a fixed in lieu payment instead of any moving, searching and reestablishment expenses. The payment types can be summarized as follows:

Moving Expenses
Moving expenses may include the following actual, reasonable costs:

- The moving of inventory, machinery, equipment and similar business-related property, including: dismantling, disconnecting, crating, packing, loading, insuring, transporting, unloading, unpacking, and reconnecting of personal property. Items identified as real property may not be moved under the Relocation Assistance Program. If the displacee buys an Item Pertaining to the Realty back at salvage value, the cost to move that item is borne by the displacee.
- Loss of tangible personal property provides payment for actual, direct loss of personal property that the owner is permitted not to move.
- Expenses related to searching for a new business site, up to $2,500, for reasonable expenses actually incurred.

Reestablishment Expenses
Reestablishment expenses related to the operation of the business at the new location, up to $25,000 for reasonable expenses actually incurred.

Fixed In Lieu Payment
A fixed payment in lieu of moving, searching, and reestablishment payments may be available to businesses that meet certain eligibility requirements. This payment is an amount equal to half the average annual net earnings for the last two taxable years prior to the relocation and may not be less than $1,000 nor more than $40,000.

ADDITIONAL INFORMATION

Reimbursement for moving costs and replacement housing payments are not considered income for the purpose of the Internal Revenue Code of 1954, or for the purpose of determining the extent of eligibility of a displacee for assistance under the Social Security Act, or any other law, ***except*** for any federal law providing local "Section 8" Housing Programs.

Any person, business, farm or nonprofit organization that has been refused a relocation payment by the Department relocation advisor or believes that the payment(s) offered by the agency are inadequate may appeal for a special hearing of the complaint. No legal assistance is required. Information about the appeal procedure is available from the relocation advisor.

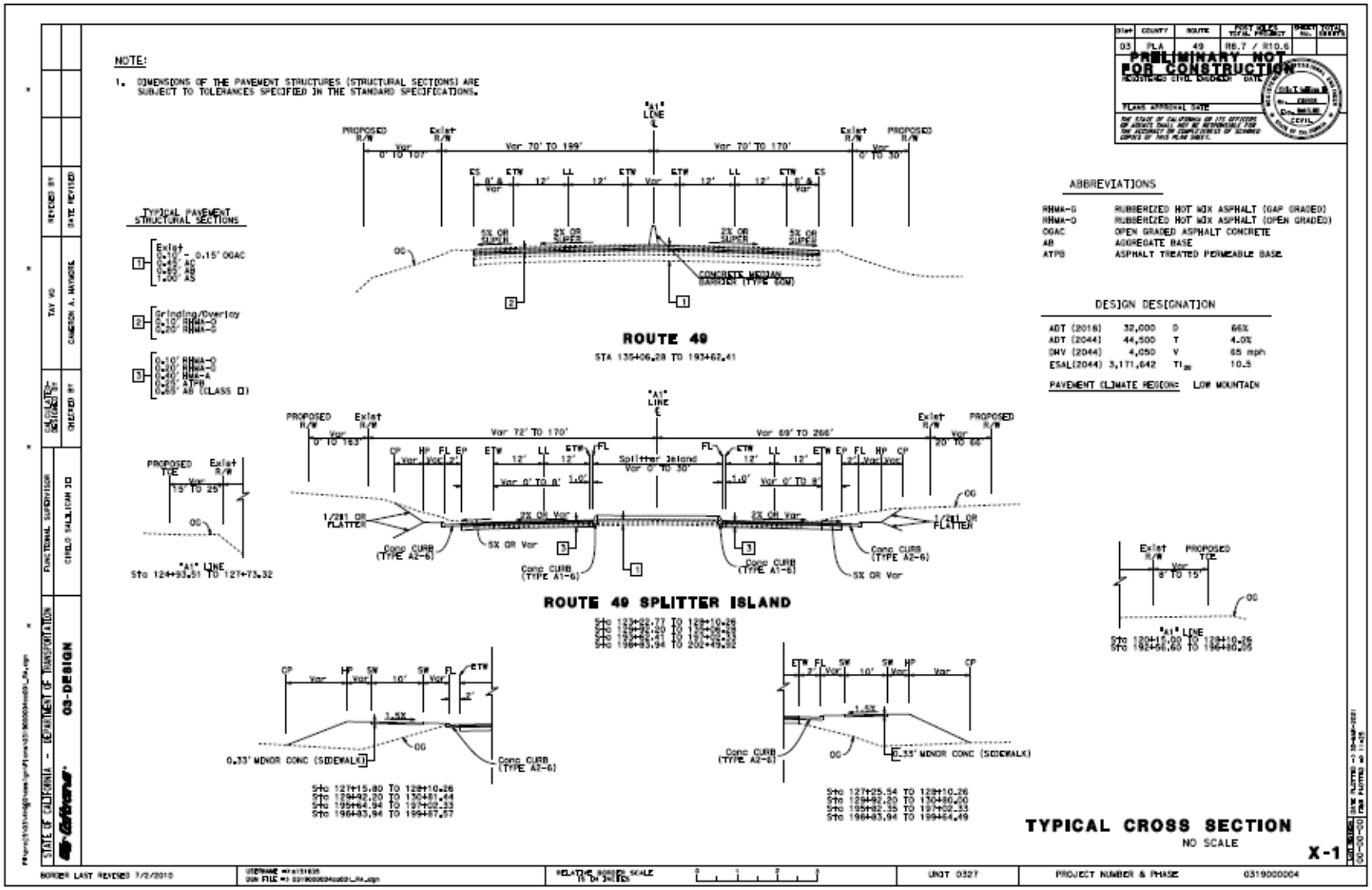
California law allows for the payment for lost goodwill that arises from the displacement for a public project. A list of ineligible expenses can be obtained from the Department's Division of Right of Way and Land Surveys. California's law and the federal regulations covering relocation assistance provide that no payment shall be duplicated by other payments being made by the displacing agency.

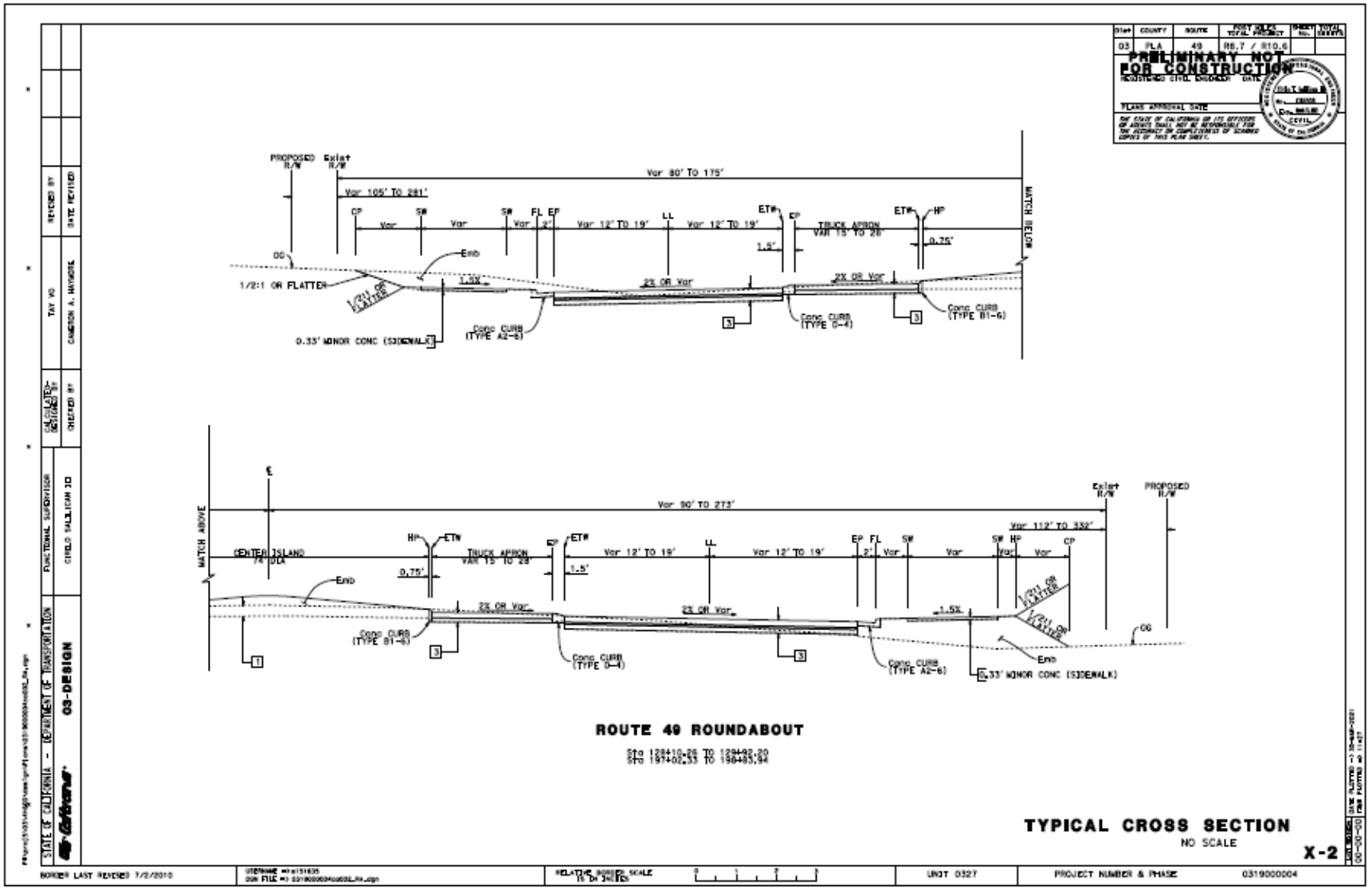
More information regarding Caltrans' Division of Right of Way's Relocation Assistance Program can be found at:

https://dot.ca.gov/programs/right-of-way/relocation-assistance-program

Appendix D. Alternative Layouts

Alternative 1

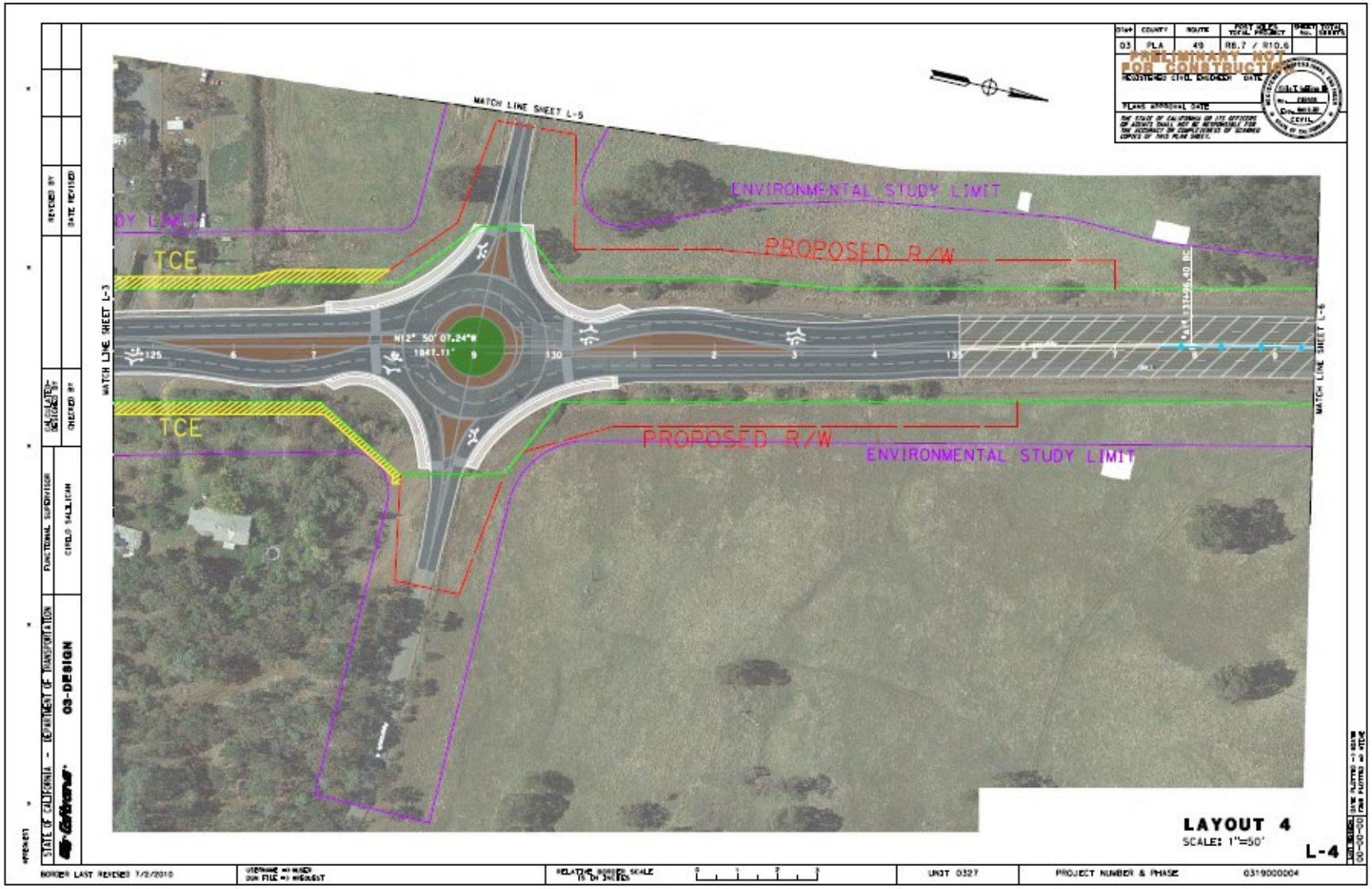



PRELIMINARY NOT FOR CONSTRUCTION
PROPOSED R/W
Exist R/W
Var 80' TO 175'
Var 105' TO 281'
MATCH BELOW
1/2:1 OR FLATTER
0.33' MINOR CONC (SIDEWALK)
Conc CURB (TYPE A2-6)
Conc CURB (TYPE D-4)
Conc CURB (TYPE B1-6)
2% OR Var
1.5%
TRUCK APRON VAR 15' TO 28'
Var 90' TO 273'
Var 112' TO 332'
MATCH ABOVE
CENTER ISLAND FA DIA
Conc CURB (TYPE B1-6)
Conc CURB (TYPE D-4)
Conc CURB (TYPE A2-6)
0.33' MINOR CONC (SIDEWALK)
ROUTE 49 ROUNDABOUT
TYPICAL CROSS SECTION
NO SCALE
X-2
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN
PROJECT NUMBER & PHASE
0319000004


MEDIAN BARRIER
Mill & Overlay
R/W Relinquished to County
EXISITING R/W
NEW R/W
TCE
PARCEL LINE
PRELIMINARY NOT FOR CONSTRUCTION
LAYOUT 1
SCALE: 1"=50'
L-1
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN


PRELIMINARY NOT FOR CONSTRUCTION
MATCH LINE SHEET L-1
MATCH LINE SHEET L-3
LAYOUT 2
SCALE: 1"=50'
L-2


ENVIRONMENTAL STU
ENVIRONMENTAL STUDY LIMIT
MATCH LINE SHEET L-2
MATCH LINE SHEET L-4
LAYOUT 3
SCALE: 1"=50'
L-3
PRELIMINARY NOT FOR CONSTRUCTION
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN

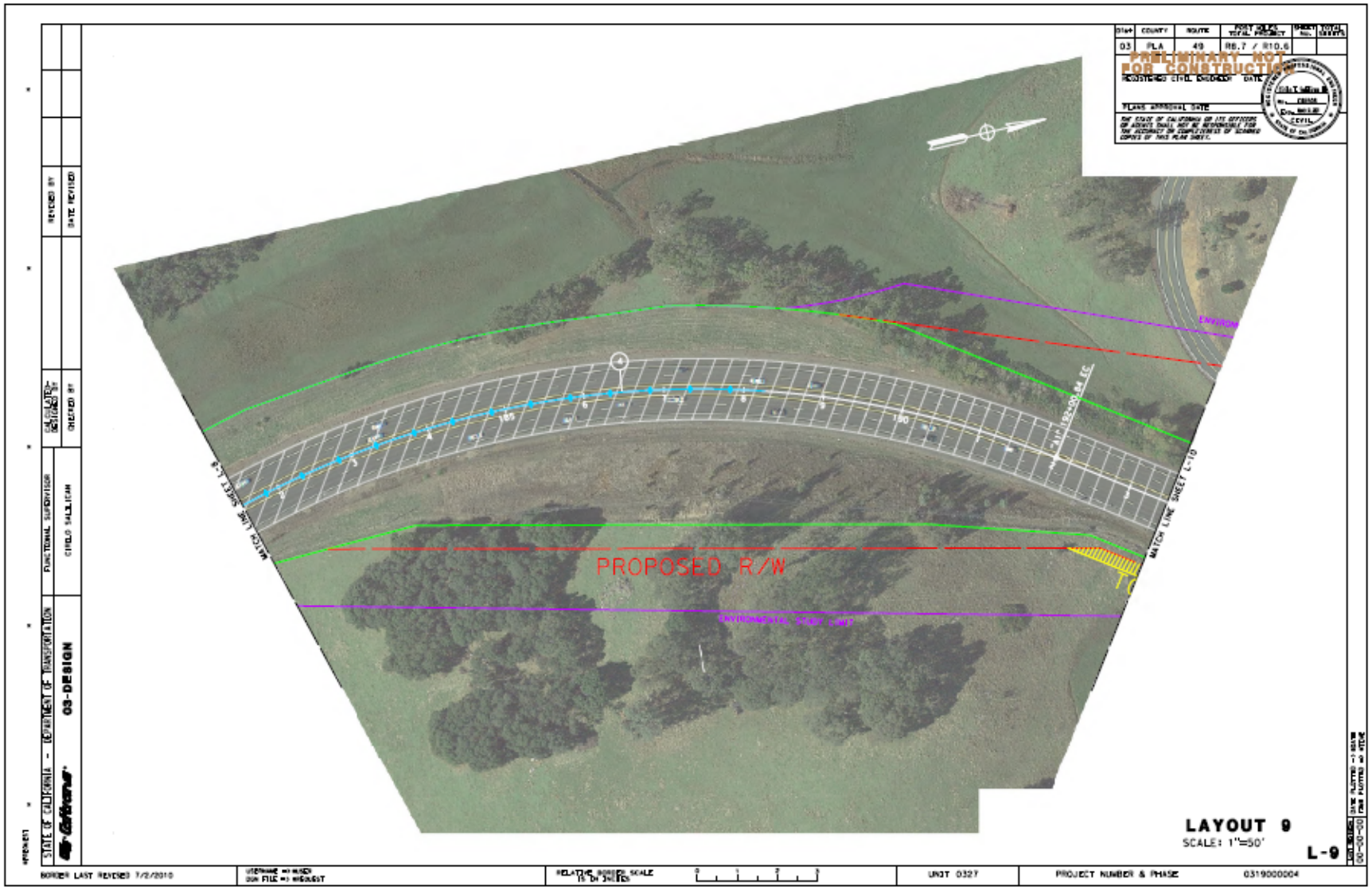

MATCH LINE SHEET L-5
ENVIRONMENTAL STUDY LIMIT
PROPOSED R/W
TCE
MATCH LINE SHEET L-3
MATCH LINE SHEET L-5
TCE
PROPOSED R/W
ENVIRONMENTAL STUDY LIMIT
LAYOUT 4
SCALE: 1"=50'
L-4
PRELIMINARY NOT FOR CONSTRUCTION
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN
BORDER LAST REVISED 7/2/2010
UNIT 0327
PROJECT NUMBER & PHASE
0319000004

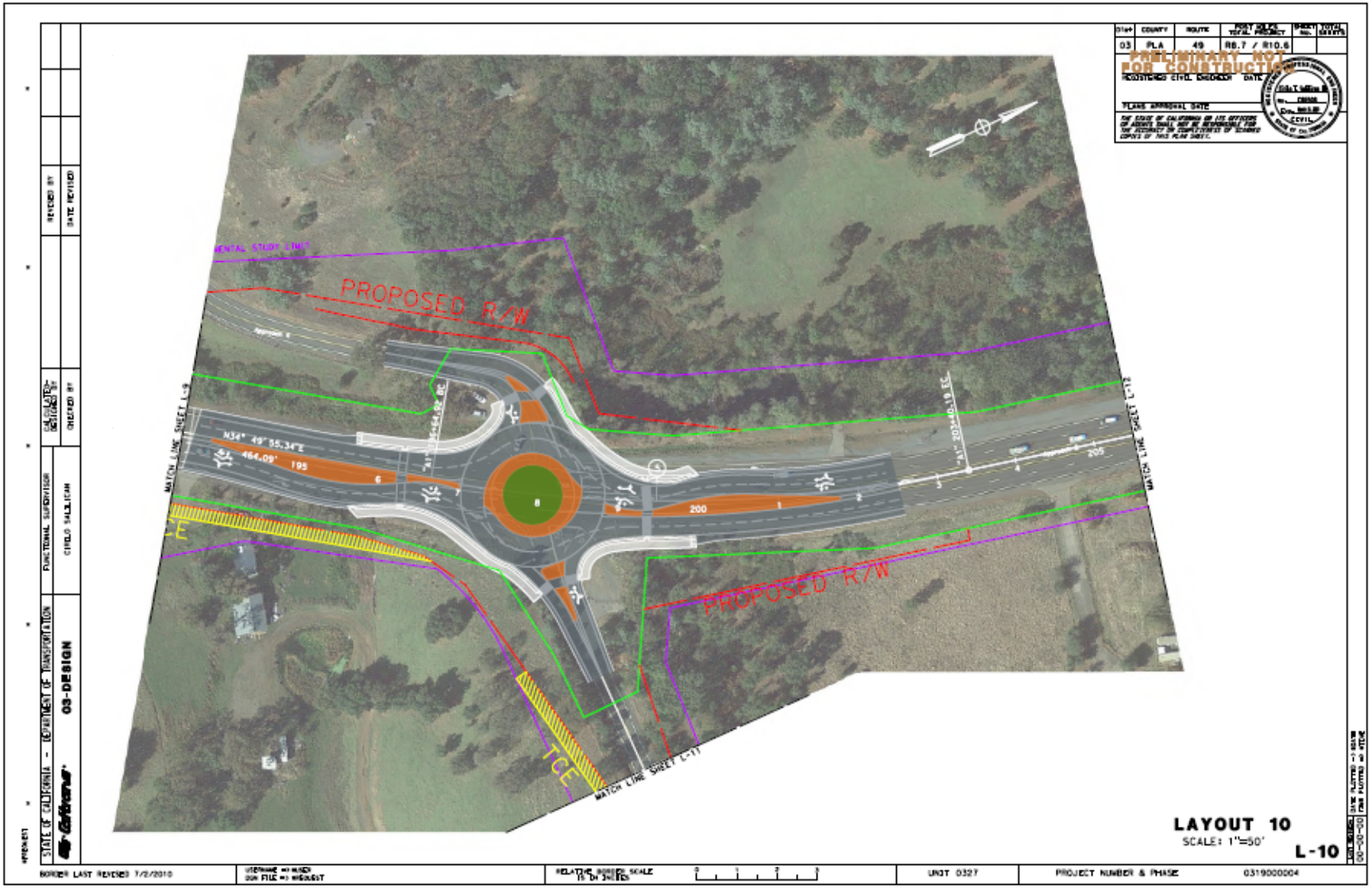

PRELIMINARY NOT FOR CONSTRUCTION
LAYOUT 5
SCALE: 1"=50'
L-5
03-DESIGN
PROJECT NUMBER & PHASE
0319000004


PRELIMINARY NOT FOR CONSTRUCTION
LAYOUT 6
SCALE: 1"=50'
L-6
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN
FUNCTIONAL SUPERVISOR
CHECKED BY
DATE REVISED
REVISED BY
PLANS APPROVAL DATE
BORDER LAST REVISED 7/2/2010
UNIT 0327
PROJECT NUMBER & PHASE 0319000004


PRELIMINARY NOT FOR CONSTRUCTION
MATCH LINE SHEET L-6
MATCH LINE SHEET L-8
LAYOUT 7
SCALE: 1"=50'
L-7
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN


PRELIMINARY NOT FOR CONSTRUCTION
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN
MATCH LINE SHEET L-7
MATCH LINE SHEET L-9
LAYOUT 8
SCALE: 1"=50'
L-8


PROPOSED R/W
MATCH LINE SHEET L-8
MATCH LINE SHEET L-10
LAYOUT 9
SCALE: 1"=50'
L-9
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN
PRELIMINARY NOT FOR CONSTRUCTION

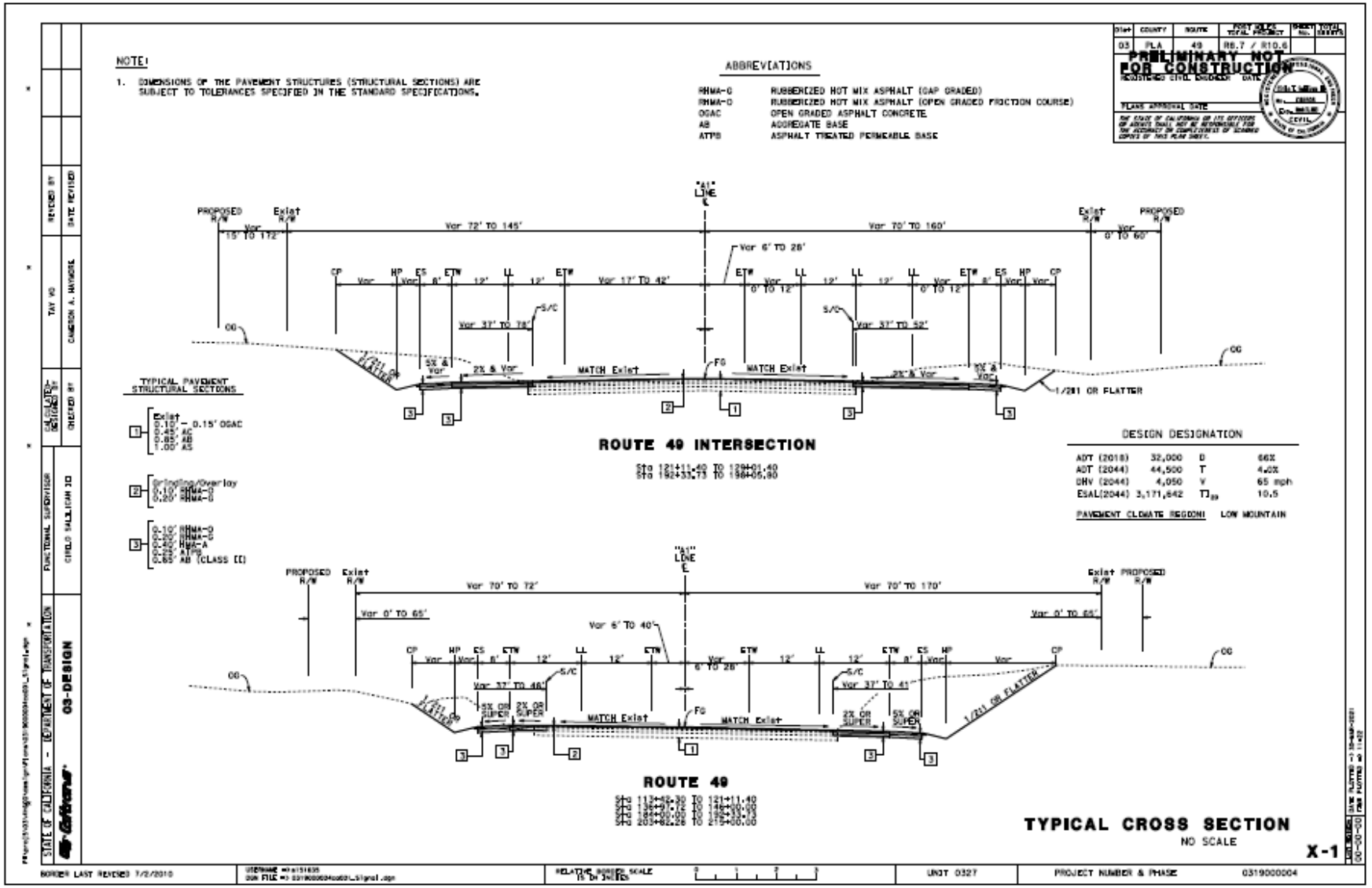

PROPOSED R/W
PROPOSED R/W
TCE
TCE
MATCH LINE SHEET L-9
MATCH LINE SHEET L-11
MATCH LINE SHEET L-11
N34° 49' 55.34"E
464.09'
195
200
205
PRELIMINARY NOT FOR CONSTRUCTION
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN
LAYOUT 10
SCALE: 1"=50'
L-10

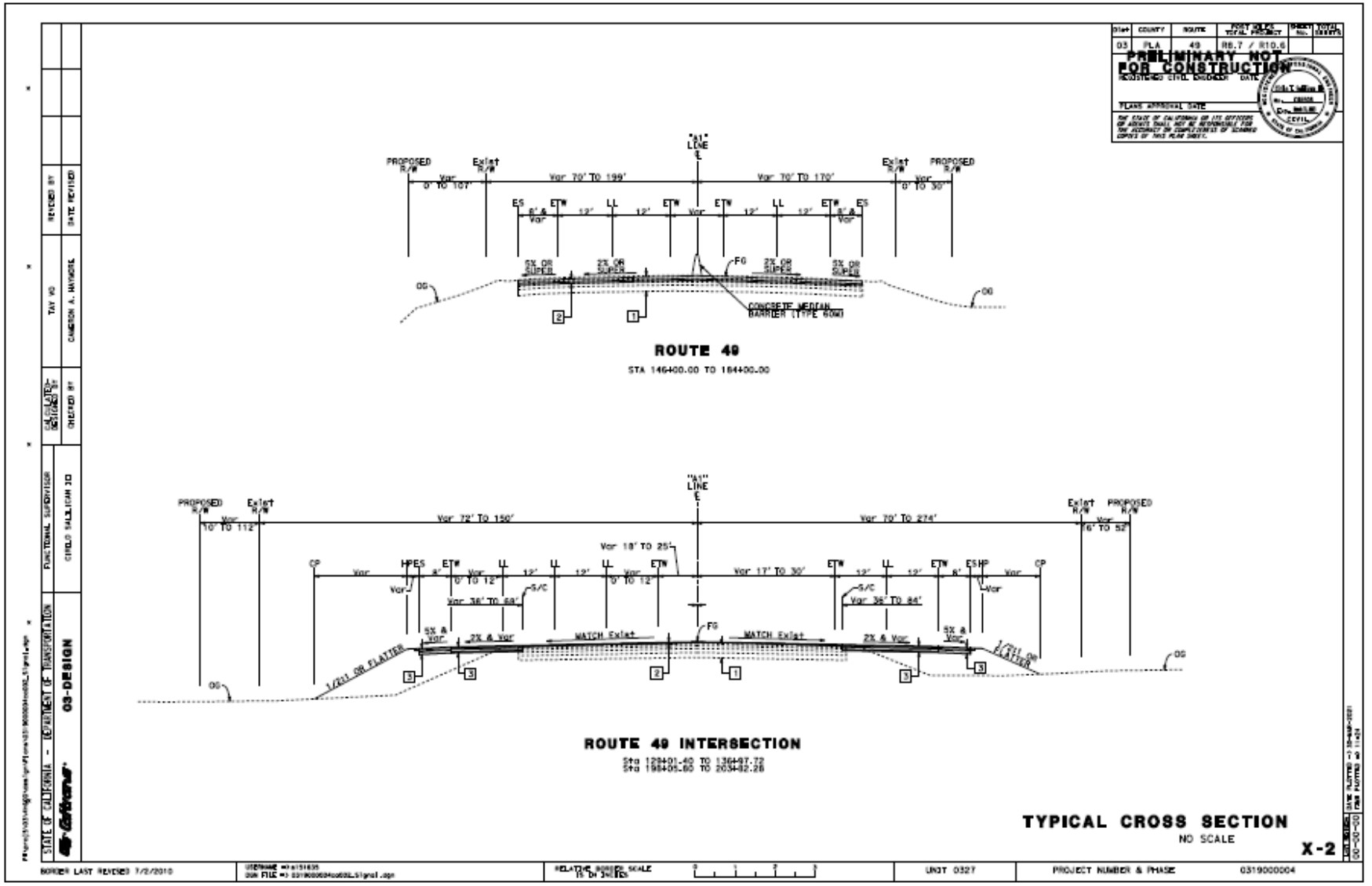

PRELIMINARY NOT FOR CONSTRUCTION
MATCH LINE SHEET L-10
LAYOUT 11
SCALE: 1"=50'
L-11
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN
PROJECT NUMBER & PHASE
0319000004


PRELIMINARY NOT FOR CONSTRUCTION
ENVIRONMENTAL STUDY LIMIT
LAYOUT 12
SCALE: 1"=50'
L-12

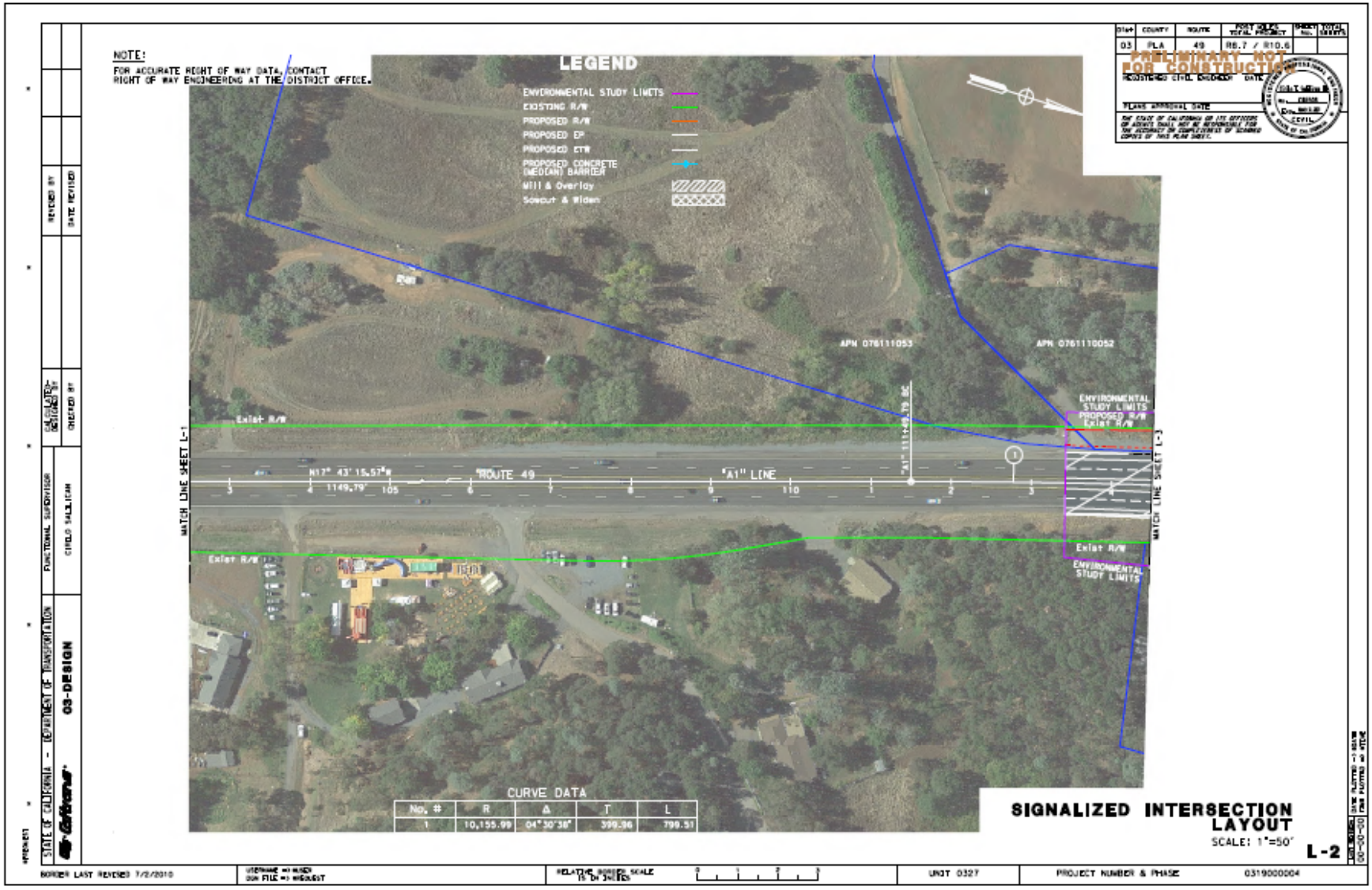

PRELIMINARY NOT FOR CONSTRUCTION
LAYOUT 13
SCALE: 1"=50'
L-13
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN
PROJECT NUMBER & PHASE
0319000004

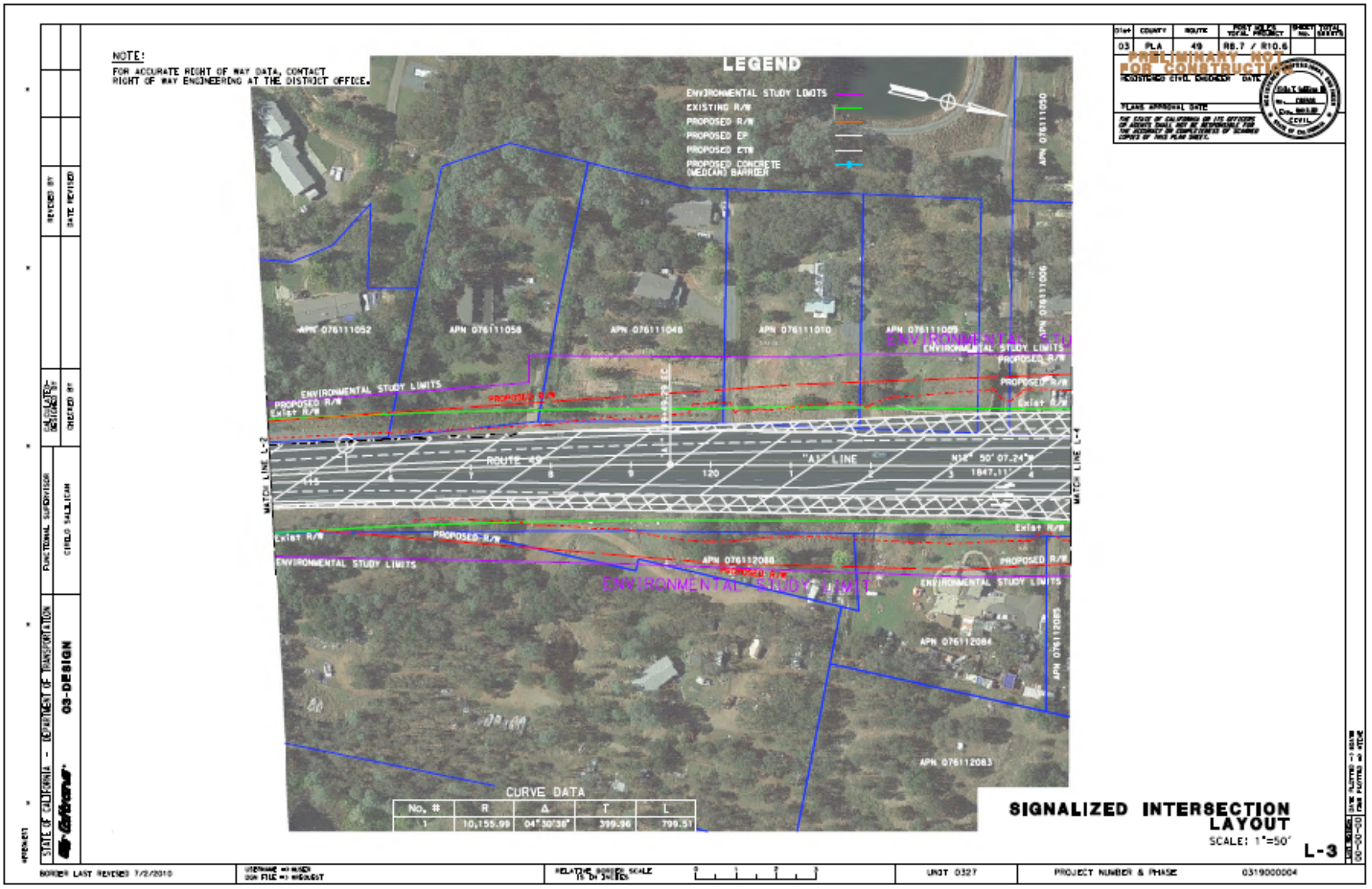
Alternative 2

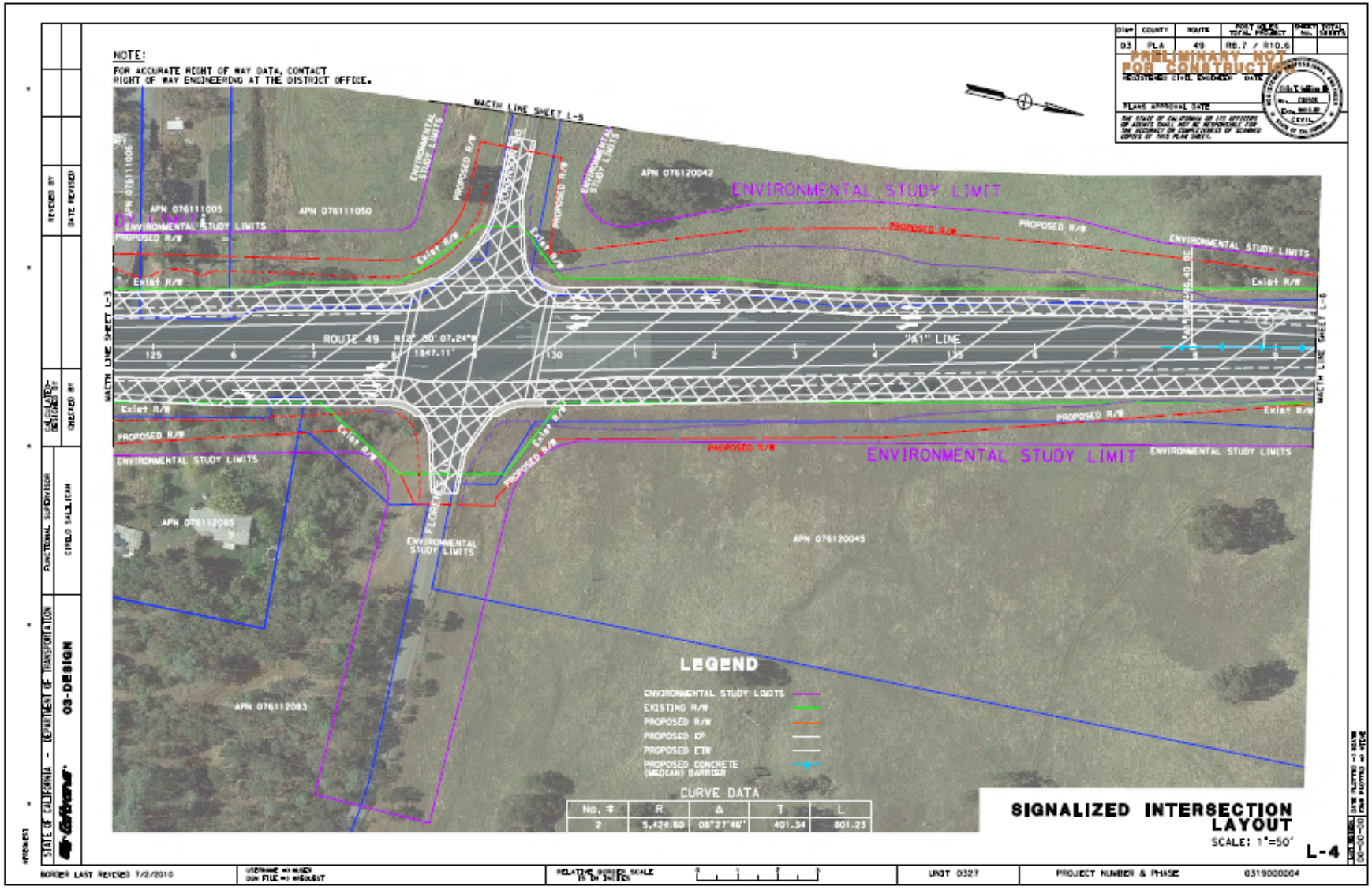



PRELIMINARY NOT FOR CONSTRUCTION
ROUTE 49
STA 146+00.00 TO 184+00.00
ROUTE 49 INTERSECTION
Sta 1284+01.40 TO 1364+97.72
Sta 1984+05.60 TO 2034+82.26
TYPICAL CROSS SECTION
NO SCALE
X-2
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN

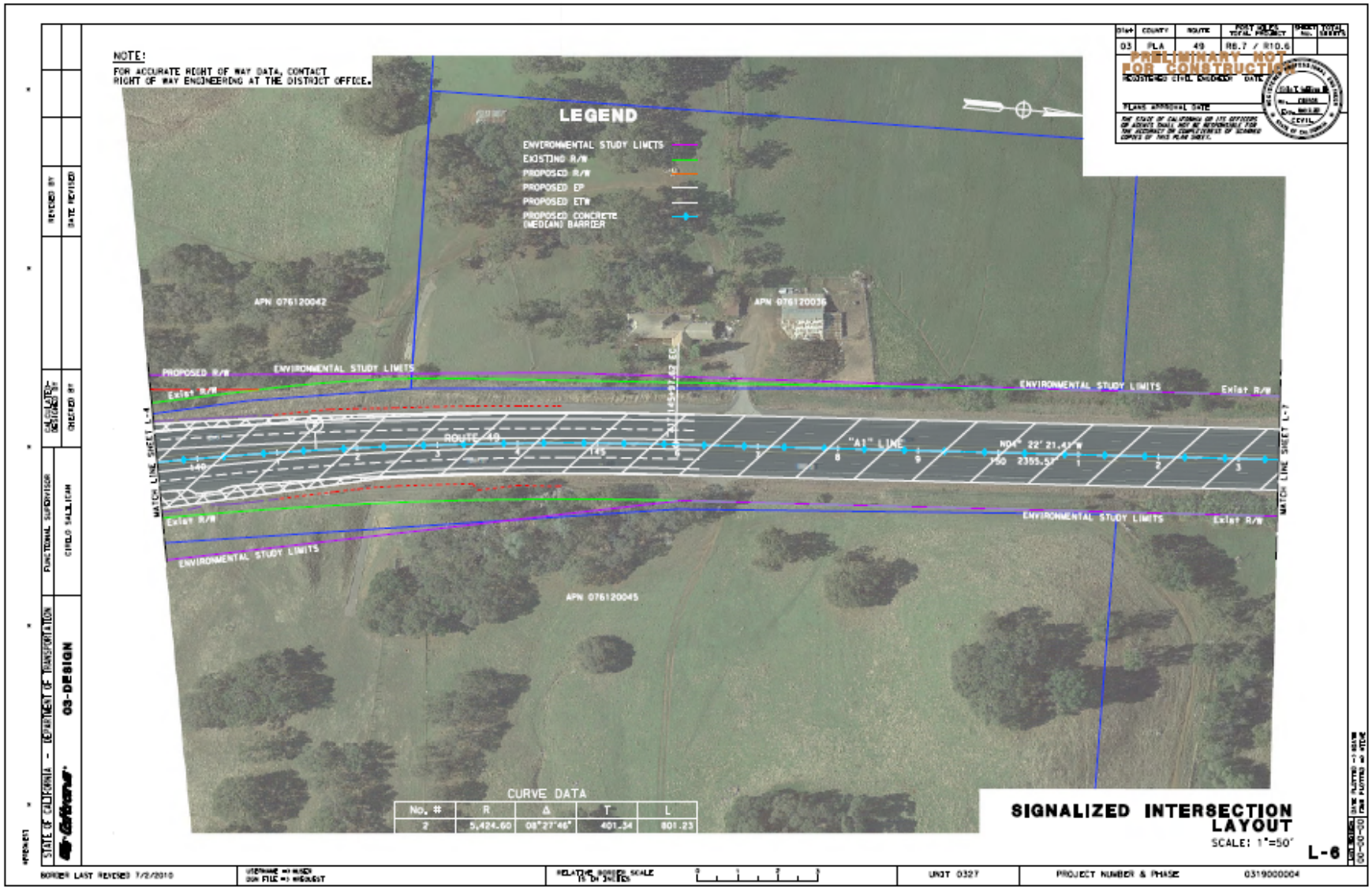

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
LEGEND
ENVIRONMENTAL STUDY LIMITS
EXISTING R/W
PROPOSED R/W
PROPOSED EP
PROPOSED ETW
Mill & Overlay
Sawcut & Widen
PROPOSED CONCRETE (MEDIAN) BARRIER
PRELIMINARY NOT FOR CONSTRUCTION
Exist R/W
ENVIRONMENTAL STUDY LIMITS
ROUTE 49
"A1" LINE N17° 43' 15.57"W
1149.79'
OVERHEAD SIGN LOCATION
MATCH LINE SHEET L-2
SIGNALIZED INTERSECTION LAYOUT
SCALE: 1"=50'
L-1
STATE OF CALIFORNIA — DEPARTMENT OF TRANSPORTATION
03-DESIGN

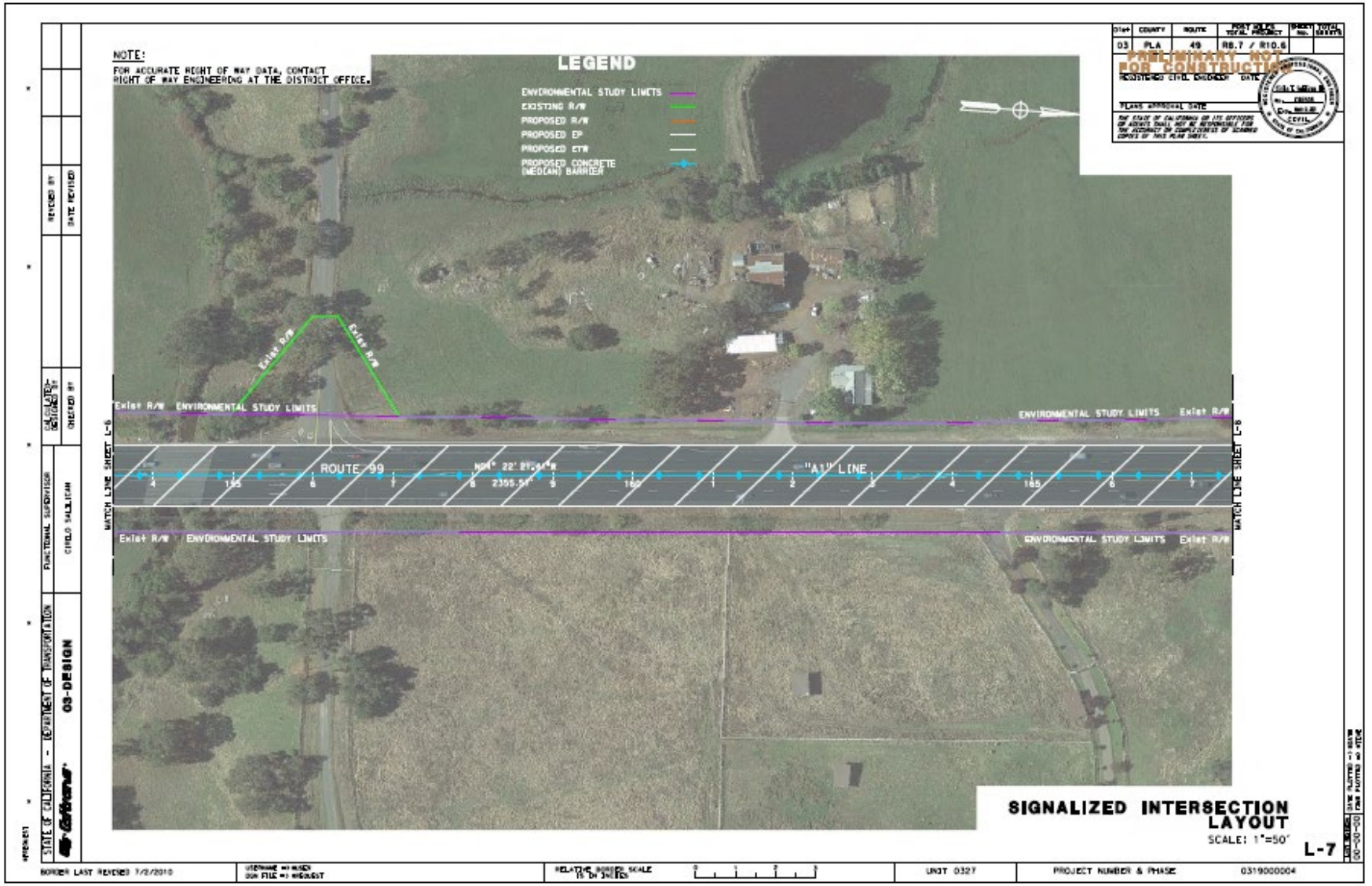

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
LEGEND
ENVIRONMENTAL STUDY LIMITS
EXISTING R/W
PROPOSED R/W
PROPOSED EP
PROPOSED CTW
PROPOSED CONCRETE (MEDIAN) BARRIER
Mill & Overlay
Sawcut & Widen
PRELIMINARY NOT FOR CONSTRUCTION
APN 076111053
APN 076110052
Exist R/W
ENVIRONMENTAL STUDY LIMITS
PROPOSED R/W
MATCH LINE SHEET L-1
MATCH LINE SHEET L-3
N12° 43' 15.57"W
1149.79'
"ROUTE 49
"A1" LINE
CURVE DATA
No. # | R | Δ | T | L
1 | 10,155.99 | 04°30'38" | 399.96 | 799.51
SIGNALIZED INTERSECTION LAYOUT
SCALE: 1"=50'
L-2
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN
FUNCTIONAL SUPERVISOR
CHECKED BY
REVISED BY
DATE REVISED
BORDER LAST REVISED 7/2/2010
UNIT 0327
PROJECT NUMBER & PHASE
0319000004

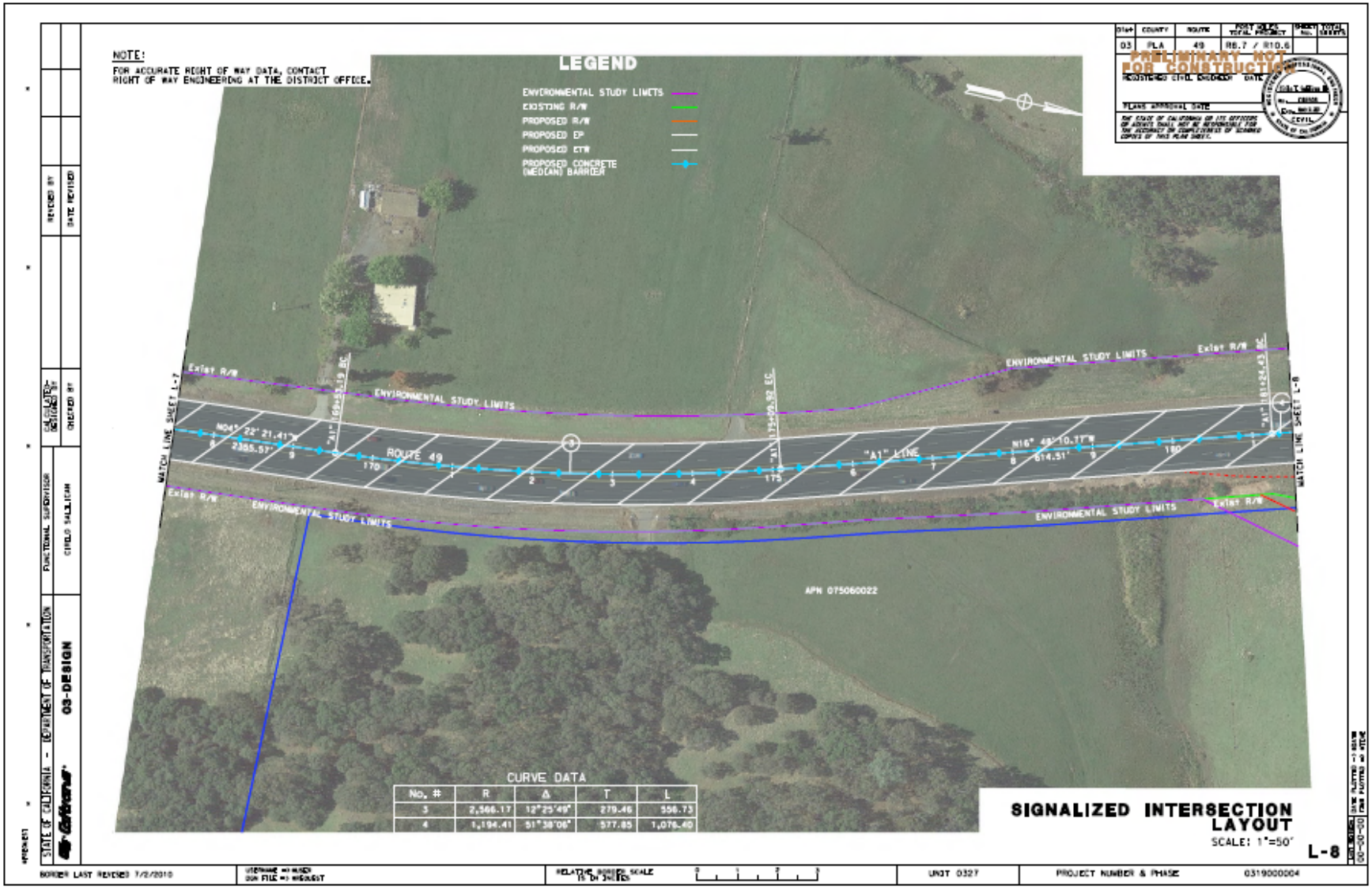

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
LEGEND
ENVIRONMENTAL STUDY LIMITS
EXISTING R/W
PROPOSED R/W
PROPOSED EP
PROPOSED CTB
PROPOSED CONCRETE (MEDIAN) BARRIER
APN 076111052
APN 076111058
APN 076111048
APN 076111010
APN 076111009
APN 076112088
APN 076112084
APN 076112083
ENVIRONMENTAL STUDY LIMITS
PROPOSED R/W
Exist R/W
ROUTE 49
"A" LINE
MATCH LINE L-2
MATCH LINE L-4
CURVE DATA
No. #
R
Δ
T
L
1
10,155.99
04°30'38"
399.96
799.51
SIGNALIZED INTERSECTION LAYOUT
SCALE: 1"=50'
L-3
PRELIMINARY NOT FOR CONSTRUCTION
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN
BORDER LAST REVISED 7/2/2010
UNIT 0327
PROJECT NUMBER & PHASE
0319000004

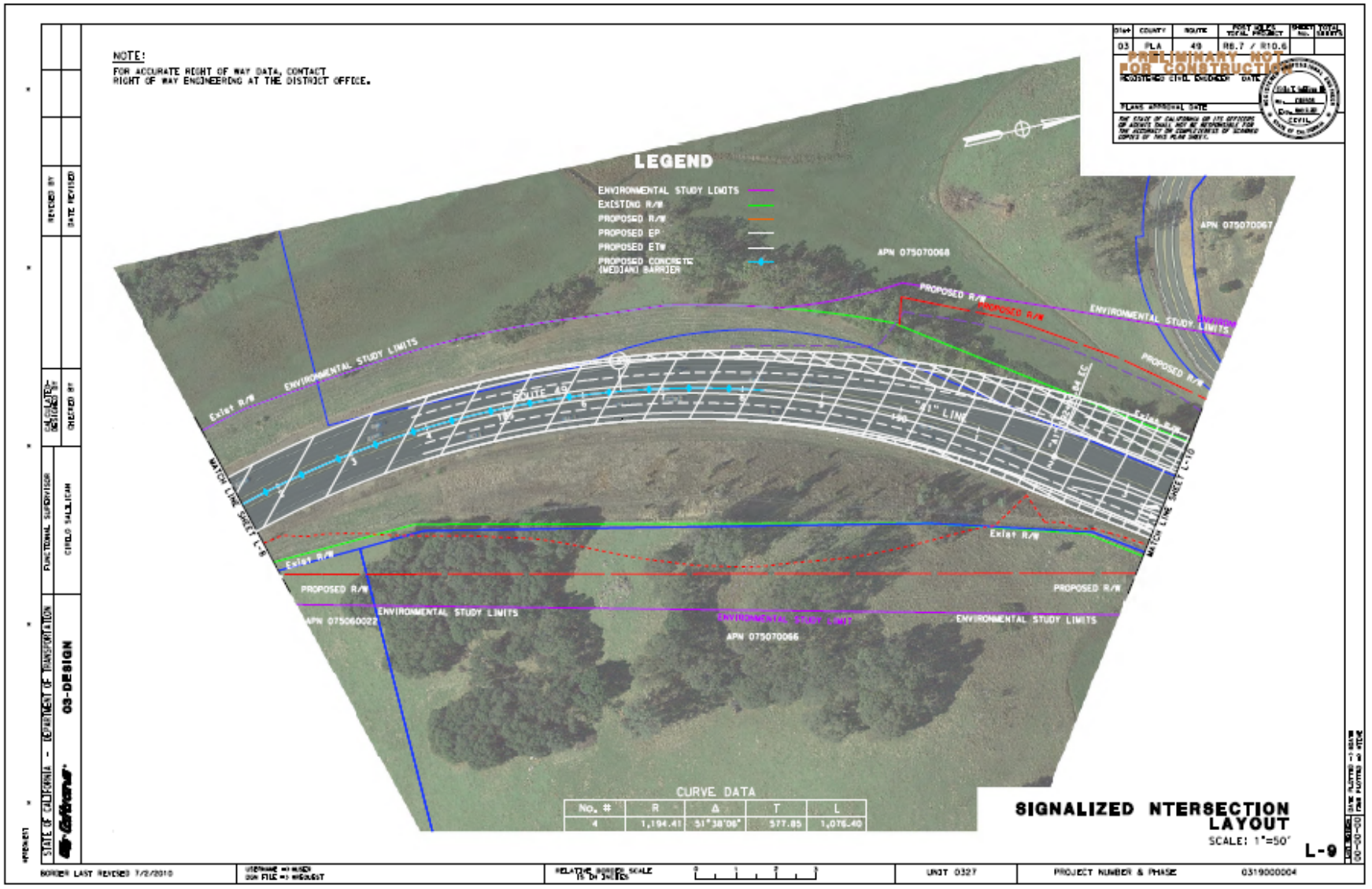

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
PRELIMINARY NOT FOR CONSTRUCTION
ENVIRONMENTAL STUDY LIMIT
ROUTE 49
"A1" LINE
APN 076120042
APN 076111005
APN 076111050
APN 076112065
APN 076120045
APN 076112083
LEGEND
ENVIRONMENTAL STUDY LIMITS
EXISTING R/W
PROPOSED R/W
PROPOSED EP
PROPOSED ETW
PROPOSED CONCRETE (MEDIAN) BARRIER
CURVE DATA
SIGNALIZED INTERSECTION LAYOUT
SCALE: 1"=50'
L-4
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN

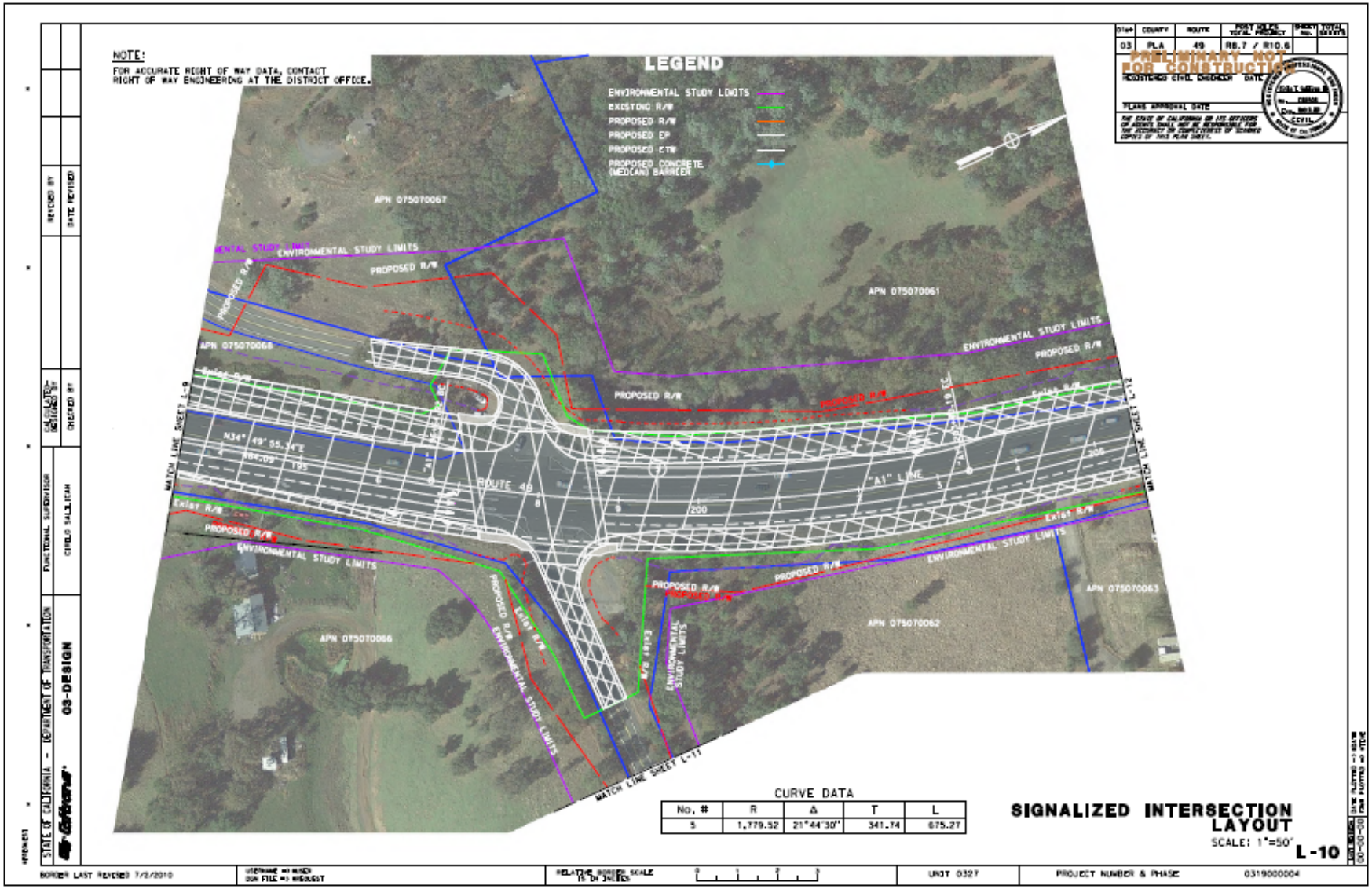

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
LEGEND
ENVIRONMENTAL STUDY LIMITS
EXISTING R/W
PROPOSED R/W
PROPOSED EP
PROPOSED ETW
PROPOSED CONCRETE (MEDIAN) BARRIER
APN 076111050
APN 076120042
LORENSON Rd
ENVIRONMENTAL STUDY LIMITS
MATCH LINE SHEET L-1
PRELIMINARY NOT FOR CONSTRUCTION
SIGNALIZED INTERSECTION LAYOUT
SCALE: 1"=50'
L-5
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN

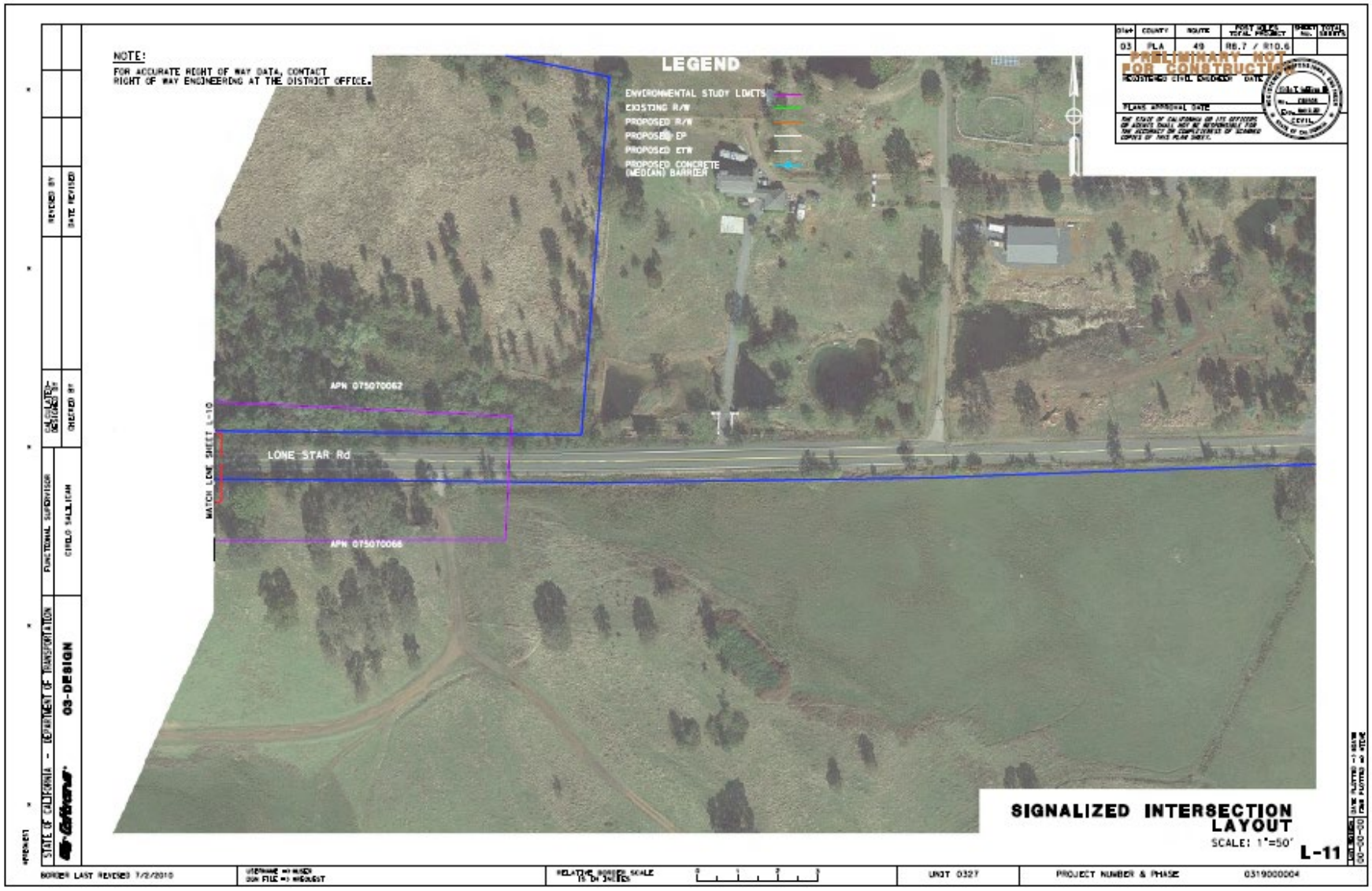

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
LEGEND
ENVIRONMENTAL STUDY LIMITS
EXISTING R/W
PROPOSED R/W
PROPOSED EP
PROPOSED ETW
PROPOSED CONCRETE (MEDIAN) BARRIER
PRELIMINARY - NOT FOR CONSTRUCTION
APN 076120042
APN 076120036
APN 076120045
PROPOSED R/W
ENVIRONMENTAL STUDY LIMITS
Exist R/W
ROUTE 49
"A1" LINE
MATCH LINE SHEET L-6
MATCH LINE SHEET L-7
CURVE DATA
SIGNALIZED INTERSECTION LAYOUT
SCALE: 1"=50'
L-6
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN

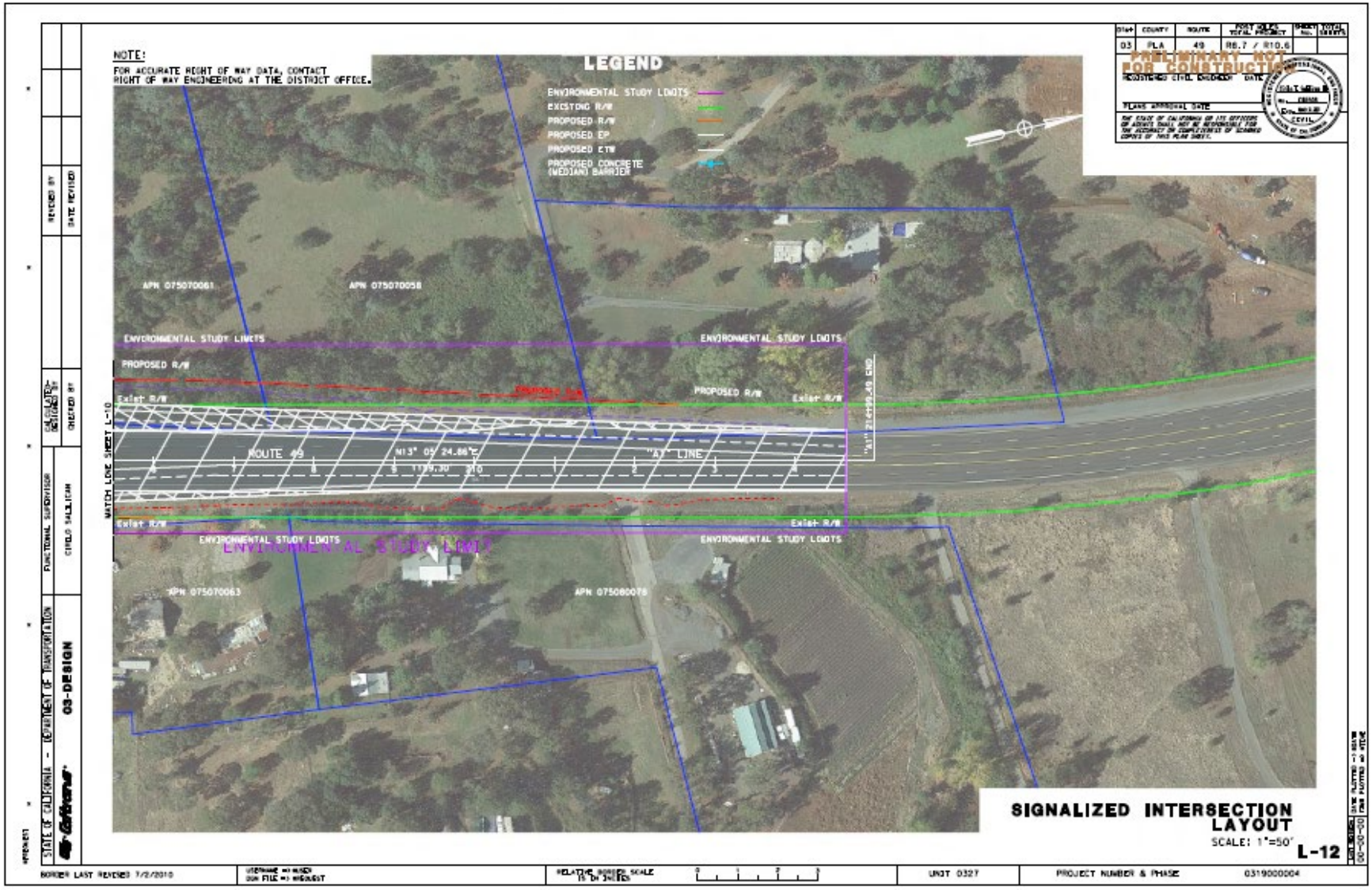

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
LEGEND
ENVIRONMENTAL STUDY LIMITS
EXISTING R/W
PROPOSED R/W
PROPOSED EP
PROPOSED ETW
PROPOSED CONCRETE (MEDIAN) BARRIER
Exist R/W
ENVIRONMENTAL STUDY LIMITS
ROUTE 99
"A" LINE
SIGNALIZED INTERSECTION LAYOUT
SCALE: 1"=50'
L-7
PRELIMINARY NOT FOR CONSTRUCTION
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN


NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
LEGEND
ENVIRONMENTAL STUDY LIMITS
EXISTING R/W
PROPOSED R/W
PROPOSED EP
PROPOSED CTR
PROPOSED CONCRETE (MEDIAN) BARRIER
PRELIMINARY NOT FOR CONSTRUCTION
ROUTE 49
"A1" LINE
Exist R/W
ENVIRONMENTAL STUDY LIMITS
APN 075060022
CURVE DATA
No. # | R | Δ | T | L
3 | 2,566.17 | 12°25'49" | 279.46 | 556.73
4 | 1,194.41 | 51°38'06" | 577.85 | 1,076.40
SIGNALIZED INTERSECTION LAYOUT
SCALE: 1"=50'
L-8
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN
BORDER LAST REVISED 7/2/2010
UNIT 0327
PROJECT NUMBER & PHASE 0319000004


NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
LEGEND
ENVIRONMENTAL STUDY LIMITS
EXISTING R/W
PROPOSED R/W
PROPOSED EP
PROPOSED ETW
PROPOSED CONCRETE (MEDIAN) BARRIER
PRELIMINARY NOT FOR CONSTRUCTION
APN 075070068
APN 075070067
APN 075060022
APN 075070066
PROPOSED R/W
ENVIRONMENTAL STUDY LIMITS
Exist R/W
ROUTE 49
MATCH LINE SHEET L-8
MATCH LINE SHEET L-10
CURVE DATA
SIGNALIZED NTERSECTION LAYOUT
SCALE: 1"=50'
L-9
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN


NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
LEGEND
ENVIRONMENTAL STUDY LIMITS
EXISTING R/W
PROPOSED R/W
PROPOSED EP
PROPOSED ETW
PROPOSED CONCRETE (MEDIAN) BARRIER
PRELIMINARY NOT FOR CONSTRUCTION
APN 075070067
APN 075070061
APN 075070068
APN 075070066
APN 075070062
APN 075070063
ROUTE 49
"A1" LINE
MATCH LINE SHEET L-9
MATCH LINE SHEET L-11
CURVE DATA
No. # | R | Δ | T | L
5 | 1,779.52 | 21°44'30" | 341.74 | 675.27
SIGNALIZED INTERSECTION LAYOUT
SCALE: 1"=50'
L-10
STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION
03-DESIGN


NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
LEGEND
ENVIRONMENTAL STUDY LIMITS
EXISTING R/W
PROPOSED R/W
PROPOSED EP
PROPOSED ETW
PROPOSED CONCRETE (MEDIAN) BARRIER
APN 075070062
APN 075070066
LONE STAR Rd
MATCH LINE SHEET L-10
PRELIMINARY NOT FOR CONSTRUCTION
SIGNALIZED INTERSECTION LAYOUT
SCALE: 1"=50'
L-11
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN


NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
LEGEND
ENVIRONMENTAL STUDY LIMITS
EXISTING R/W
PROPOSED R/W
PROPOSED EP
PROPOSED ETW
PROPOSED CONCRETE (MEDIAN) BARRIER
PRELIMINARY NOT FOR CONSTRUCTION
APN 075070061
APN 075070058
APN 075070063
APN 075060076
ROUTE 49
"A" LINE
MATCH LINE SHEET L-10
SIGNALIZED INTERSECTION LAYOUT
SCALE: 1"=50'
L-12
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN


NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
LEGEND
ENVIRONMENTAL STUDY LIMITS
EXISTING R/W
PROPOSED R/W
PROPOSED EP
PROPOSED ETW
PROPOSED CONCRETE (MEDIAN) BARRIER
ENVIRONMENTAL STUDY LIMITS
OVERHEAD SIGN LOCATION
ROUTE 49
ENVIRONMENTAL STUDY LIMITS
SIGNALIZED INTERSECTION LAYOUT
SCALE: 1"=50'
L-13
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN
CHECKED BY
DATE REVISED
REVISED BY
BORDER LAST REVISED 7/2/2010
UNIT 0327
PROJECT NUMBER & PHASE 0319000004

Appendix E. Avoidance, Minimization and/or Mitigation Summary

Environmental Commitments Record (ECR)

DIST-CO-RTE: 03 - PLA - 049 **PM/PM:** R8.700/R10.600 **EA/Project ID:** 03-4H600_ / 0319000004
Project Description: Construct concrete median barrier and two roundabouts.
Date (Last modification):
Environmental Planner: Sandeep Sandhu **Phone:** 530-720-3324
Construction Liaison: **Phone:**
Resident Engineer: **Phone:**

PERMITS

Permit	Agency	Application Submitted	Permit Received	Permit Expiration	Permit Requirements Completed by	Permit Requirements Completed on	Comments
1600	California Department of Fish & Wildlife						
401	Regional Water Quality Control Board						
404 Nationwide Verification	US Army Corps of Engineers						
Preliminary Jurisdictional Determination (PJD)	US Army Corps of Engineers						

ENVIRONMENTAL COMMITMENTS

PS&E/BEFORE RTL

Category	Task and Brief Description	Source	Included in PS&E Package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA
Hazardous Waste	PSI for ADL required				PE needs to request PSI prior to PS&E		Signature	Date		
Hazardous Waste	Use SSP 36-4 which is applicable to non-hazardous waste created during removal of asphalt rumble strips with yellow striping.	ISA	SSP	OE/RE/ECL/Haz Waste Specialist			Signature	Date		

Page 1

Environmental Commitments Record for Placer 49 Safety Barrier

Category	Task and Brief Description	Source	Included in PS&E Package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA
PRE-CONSTRUCTION										
Biology	Contact project biologist for locations of ESA fencing.		n/a	Engineer	Contact project biologist for exact locations of ESA fencing.		Signature	Date		
Biology	Per SSP 14-6.03A, 14-6.03B, 14-6.03D(1), 14-6.03D(2) - A qualified Contractor Supplied Biologist must conduct a focused survey for active bird nests if construction occurs during the nesting season (February 1 - September 30) within the limits of the project ESL. These surveys will be conducted no more than 7 days prior to the initiation of construction activities. Stop all work within 100 feet if an active bird nest is discovered and contact the Environmental Construction Liaison or Project Biologist.	SSP	SSP	Engineer	Bird nest surveys within 7 days prior to ground breaking activities.		Signature	Date		
Biology	Per SSP 14-6.03A, 14-6.03D(1), 14-6.03D(2) - A qualified Contractor Supplied Biologist must conduct focused amphibian surveys 7 days prior to ground breaking activities.	SSP	SSP	Engineer	Amphibian surveys 7 days prior to ground breaking activities.		Signature	Date		
Cultural Resources	Establish ESA fencing around the cultural site.		n/a	Engineer	Place fencing around the cultural site. Contact Archaeologist when this is completed.		Signature	Date		
Hazardous Waste	Review and approve the Lead Compliance Plan provided by the contractor prior to start of construction.	ISA	n/a	Contractor/RE/ECL			Signature	Date		
Other	Follow all Caltrans Standard Specifications for Environmental Section 14.	Std. Spec	Std. Spec	RE			Signature	Date		

Page 2

Environmental Commitments Record for Placer 49 Safety Barrier

Category	Task and Brief Description	Source	Included in PS&E Package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA
Other	Invite Biologist and ECL to the Pre-Construction Meeting.	N/A	n/a	Contractor/RE/ECL/Biologist			Signature	Date		

CONSTRUCTION

Category	Task and Brief Description	Source	Included in PS&E Package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA
Hazardous Waste	Use SSP 14-11.14 Treated Wood Waste	ISA	SSP	Contractor/RE/ECL	Implement and adhere to the provisions in the SSP regarding the handling, removal, and disposal of treated wood waste.		Signature	Date		
Hazardous Waste	Use SSP 7-1.02K(6)(j)(II) Earth Material Containing Lead	ISA	SSP	Contractor/RE/ECL	Implement and adhere to the provisions in the SSP regarding the handling, removal, and disposal of earth materials containing lead.		Signature	Date		
Landscape	Temporary construction activities that require nighttime illumination sources for staging, access, or other construction activities shall comply with Caltrans Standard Specification 7-1.04, Public Safety.	VIA	Std. Spec	RE/ECL/Contractor			Signature	Date		
Landscape	Vegetation removal shall be limited to the extent necessary yo construct the project in accordance to Caltrans Standard Specification 5-1.36B, Landscape and 5-1.39C(1), Landscape.	VIA	Std. Spec	RE/ECL/Contractor			Signature	Date		

POST-CONSTRUCTION

Category	Task and Brief Description	Source	Included in PS&E Package	Responsible Branch/Staff	Action to Comply	Due Date	Task Completed by	Task Completed on	Remarks	Mitigation for significant impacts under CEQA
Other	Complete the CEC after construction is complete	Other	n/a	ECL			Signature	Date		

Page 3

Appendix F. Special Status Species Lists

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:
Consultation Code: 08ESMF00-2020-SLI-1812
Event Code: 08ESMF00-2021-E-03458
Project Name: PLA 49 Safety Project (03-4H600)

March 03, 2021

Subject: Updated list of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to

utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2020-SLI-1812
Event Code: 08ESMF00-2021-E-03458
Project Name: PLA 49 Safety Project (03-4H600)
Project Type: TRANSPORTATION
Project Description: Two roundabouts on SR 49 to improve traffic safety.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.984963370904026,-121.10749193286487,14z

Counties: Placer County, California

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Flowering Plants

NAME	STATUS
Stebbins' Morning-glory *Calystegia stebbinsii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3991	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

NMFS Species List - PLA 49 Safety Improvement 03-4H600

Angell, Kelli@DOT
Wed 3/3/2021 4:14 PM

To:

nmfs.wcrca.specieslist@noaa.gov

California Department of Transportation
703 B St.
Marysville, CA 95901
PLA 49 Safety Improvement Project 03-4H600
Kelli Angell, kelli.angell@dot.ca.gov, 530-812-4305

Quad Name Auburn
Quad Number 38121-H1
ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) - X
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - X
Eulachon (T) -
sDPS Green Sturgeon (T) -
ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat - X

Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -
ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -
ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -
ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -
ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -
ESA Pinnipeds

Guadalupe Fur Seal (T) -
Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH - X
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -
MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds
See list at left and consult Monica DeAngelis
monica.deangelis@noaa.gov
562-980-3232

MMPA Cetaceans -
MMPA Pinnipeds -

Federal ESA - - NOAA Fisheries Species List Re: Species List - PLA 49 Safety Improvement 03-4H600

Label: Enforced: Inbox 120 day (4 months) Expires: Thu 7/1/2021 5:14 PM

[redacted]

NMFS SpeciesList - NOAA Service Account <nmfs.wcrca.specieslist@noaa.gov>
Wed 3/3/2021 4:14 PM

To:

Angell, Kelli@DOT

EXTERNAL EMAIL. Links/attachments may not be safe.

Receipt of this email confirms that NOAA Fisheries has received your email requesting confirmation of an Endangered Species Act SPECIES LIST. If you provided your name, phone number, federal agency name (or delegated state agency such as Caltrans), mailing address, project title, and a brief description of the project, and a copy of a list of threatened or endangered species identified within specified geographic areas generated from NOAA Fisheries, West Coast Region, California Species List Tool, this email, along with the list you generated, serves as your federal Endangered Species Act SPECIES LIST. If you have a question, contact your local NOAA Fisheries liaison.

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Auburn (3812181))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Allium jepsonii Jepson's onion	PMLIL022V0	None	None	G2	S2	1B.2
Ammonitella yatesii tight coin (=Yates' snail)	IMGASB0010	None	None	G1	S1	
Andrena subapasta An andrenid bee	IIHYM35210	None	None	G1G2	S1S2	
Banksula galilei Galile's cave harvestman	ILARA14040	None	None	G1	S1	
Bombus morrisoni Morrison bumble bee	IIHYM24460	None	None	G4G5	S1S2	
Clarkia biloba ssp. brandegeeae Brandegee's clarkia	PDONA05053	None	None	G4G5T4	S4	4.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
Cosumnoperla hypocrena Cosumnes stripetail	IIPLE23020	None	None	G2	S2	
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
Fritillaria eastwoodiae Butte County fritillary	PMLIL0V060	None	None	G3Q	S3	3.2
Lathyrus sulphureus var. argillaceus dubious pea	PDFAB25101	None	None	G5T1T2Q	S1S2	3
Rana boylii foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
Viburnum ellipticum oval-leaved viburnum	PDCPR07080	None	None	G4G5	S3?	2B.3

Record Count: 13

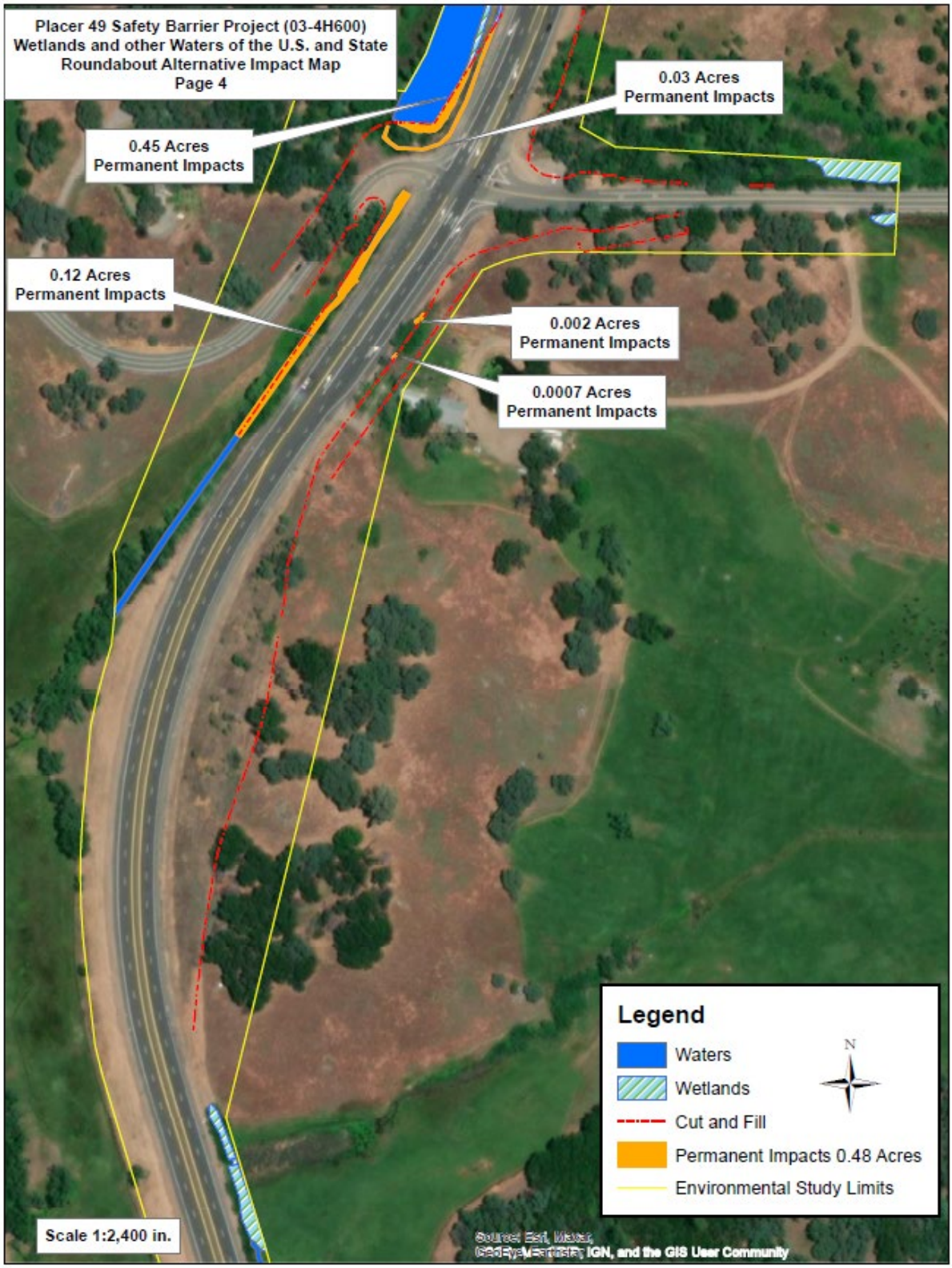
CNPS Species List Obtained 3/4/2021				
Scientific Name	Common Name	CRPR	CESA	FESA
Allium jepsonii	Jepson's onion	1B.2	None	None
Fritillaria eastwoodiae	Butte County fritillary	3.2	None	None
Lathyrus sulphureus var. argillaceus	dubious pea	3	None	None
Viburnum ellipticum	oval-leaved viburnum	2B.3	None	None

Appendix G. Wetland Impact Mapping

Alternative 1

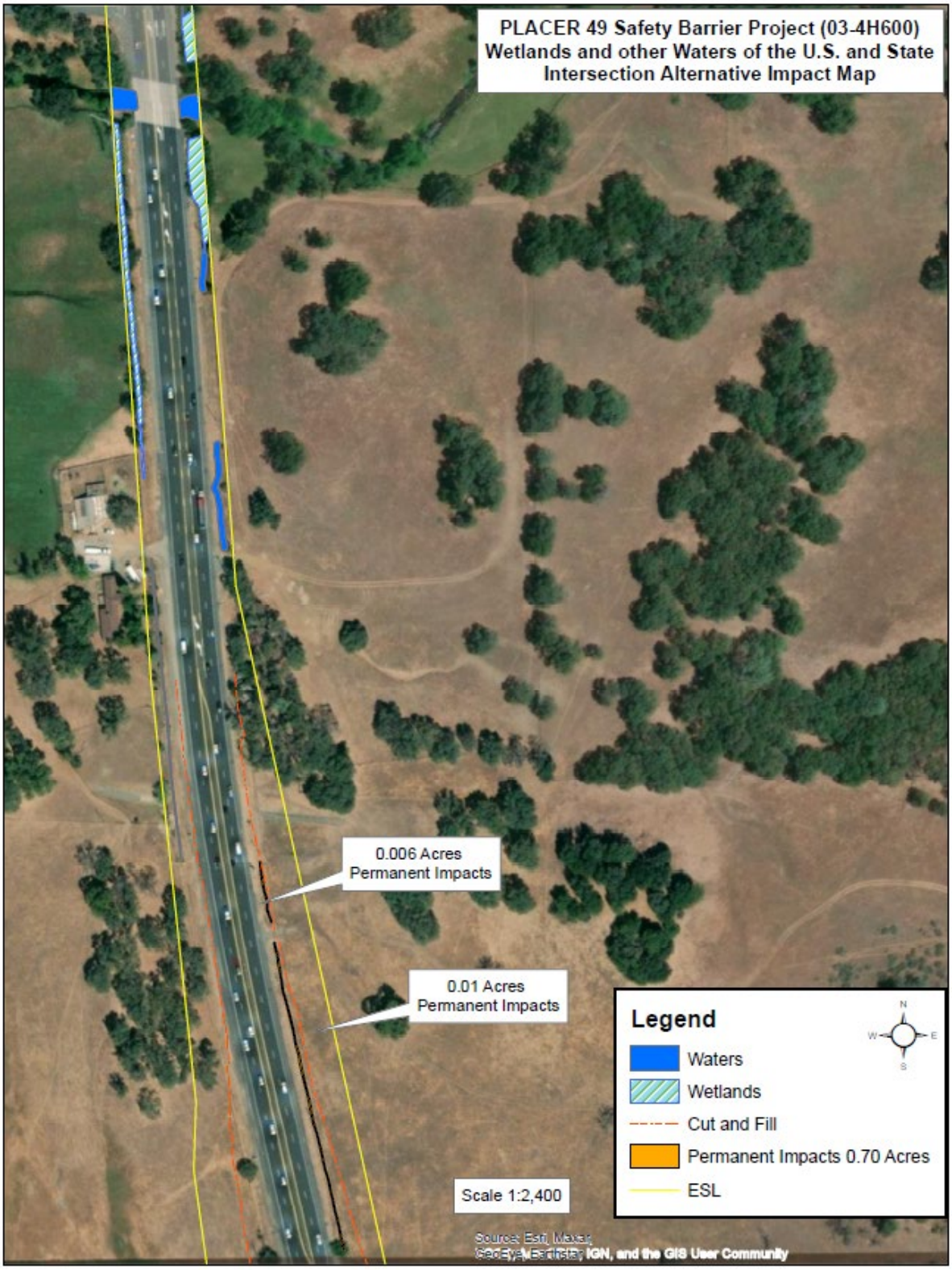

Placer 49 Safety Barrier Project (03-4H600)
Wetlands and other Waters of the U.S. and State
Roundabout Alternative Impact Map
Page 2
Legend
N
Waters
Wetlands
Cut and Fill
Permanent Impacts 0.48 Acres
Environmental Study Limits
0.003 Acres
Permanent Impacts
Scale 1:2,400 in.
Source: Esri, Maxar,
GeoEye, Earthstar, IGN, and the GIS User Community


Placer 49 Safety Barrier Project (03-4H600)
Wetlands and other Waters of the U.S. and State
Roundabout Alternative Impact Map
Page 3
0.00 Acres
Permanent Impacts
Legend
N
Waters
Wetlands
Cut and Fill
Permanent Impacts 0.48 Acres
Environmental Study Limits
Scale 1:2,400 in.
Source: Esri, Maxar,
GeoEye, Earthstar, IGN, and the GIS User Community


Placer 49 Safety Barrier Project (03-4H600)
Wetlands and other Waters of the U.S. and State
Roundabout Alternative Impact Map
Page 4
0.03 Acres
Permanent Impacts
0.45 Acres
Permanent Impacts
0.12 Acres
Permanent Impacts
0.002 Acres
Permanent Impacts
0.0007 Acres
Permanent Impacts
Legend
Waters
Wetlands
Cut and Fill
Permanent Impacts 0.48 Acres
Environmental Study Limits
N
Scale 1:2,400 in.
Source: Esri, Maxar,
GeoEye, Earthstar, IGN, and the GIS User Community


Placer 49 Safety Barrier Project (03-4H600)
Wetlands and other Waters of the U.S. and State
Roundabout Alternative Impact Map
Page 5
Legend
Permanent Impacts 0.48 Acres
Cut and Fill
Environmental Study Limits
Waters
Wetlands
N
0.0002 Acres
Permanent Impacts
Scale 1:2,400 in.
Source: Esri, Maxar, GeoEye, Earthstar, IGN, and the GIS User Community

Alternative 2


PLACER 49 Safety Barrier Project (03-4H600)
Wetlands and other Waters of the U.S. and State
Intersection Alternative Impact Map
0.006 Acres
Permanent Impacts
0.01 Acres
Permanent Impacts
Legend
Waters
Wetlands
Cut and Fill
Permanent Impacts 0.70 Acres
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Scale 1:2,400
Source: Esri, Maxar,
GeoEye, Earthstar, IGN, and the GIS User Community


PLACER 49 Safety Barrier Project (03-4H600)
Wetlands and other Waters of the U.S. and State
Intersection Alternative Impact Map
0.00 Acres
Permanent Impacts
Legend
Waters
Wetlands
Cut and Fill
Permanent Impacts 0.70 Acres
ESL
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E
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Scale 1:2,400
Source: Esri, Maxar,
GeoEye, Earthstar, IGN, and the GIS User Community


PLACER 49 Safety Barrier Project (03-4H600)
Wetlands and other Waters of the U.S. and State
Intersection Alternative Impact Map
0.18 Acres
Permanent Impacts
Legend
Waters
Wetlands
Cut and Fill
Permanent Impacts 0.70 Acres
ESL
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Scale 1:2,400
Source: Esri, Maxar, GeoEye, Earthstar IGN, and the GIS User Community


PLACER 49 Safety Barrier Project (03-4H600)
Wetlands and other Waters of the U.S. and State
Intersection Alternative Impact Map
0.002 Acres
Permanent Impacts
0.14 Acres
Permanent Impacts
Legend
Permanent Impacts 0.70 Acres
Cut and Fill
ESL
Wetlands
Waters
N
W
E
S
Scale 1:2,400
Lone Star Road
Source: Esri, Maxar,
GeoEye, Earthstar IGN, and the GIS User Community

Appendix H. Four Pillars Document

BACKGROUND

This document is to provide supporting information for 4H600 relative to the different alternatives and associated collision pattern expected upon completion and HQ Safety required discussion on the 4 Pillars of Safety https://safetyprograms.onramp.dot.ca.gov/4-pillars.

Project EA 4H6000 was identified through the Federally mandated, State supported Highway Safety Improvement Program (HSIP) as a 201.010, Safety Improvement Program project, as part of the Multi-Lane Cross Median Monitoring Program to place PCC Median Barrier (MB) on SR 49 in Placer County, a 65 mph facility, due to a series of cross median collisions that resulted in both fatal and serious injuries. The PCC MB will be installed on a 1.9 mile segment between Lone Star Road and Lorenson Road/Florence Lane, respectively.

There are multiple issues created by placement of the PCC MB in a rural area on what is considered a conventional highway, which has numerous driveways and secondary roads with access to SR 49.

The first issue is that it will cut off direct left turn access for the public exiting from SR 49 or entering from driveways or side streets. This creates an out of direction travel issue for the public, because they will need to make a U-turn to return in the other direction of travel.

The secondary issue is that there is a need to provide a safe and viable U-turn movement at the ends of the PCC MB, which are at Lone Star Road and Lorenson Road/Florence Lane because the nearest marked U-turn movement at a traffic signal on SR 49 for northbound traffic is at Wolf-Combie Road, 3.3 miles away and for southbound traffic at Willow Creek Road, 2.8 miles away. Although the Streets and Highway Code designates the SR 49 segment from Auburn to Grass Valley as a freeway/expressway, the Code specifically defines an expressway as, "… through traffic which may have partial control of access, but which may or may not be divided or have grade separations at intersections", and this segment has no control of access.

FOUR PILLARS OF TRAFFIC SAFETY

The Department has identified safety of the transportation system as a primary Mission and has established Safety First Goal to provide a safe transportation system for all users and workers. We have also been tasked to rethink Traffic Safety processes to include the Four Pillars of Traffic Safety as we work toward the ultimate "Toward Zero Deaths" goal. This includes use of:

- FHWA Proven Safety Countermeasures, part of the Every Day Counts program;
- Safe System approach for traffic safety, which notes that death and serious injury are unacceptable, that humans make mistakes and are vulnerable, that responsibility is shared, that safety is proactive, and that system redundancy is critical;
- Accelerate advanced technology; and
- Integrating equity by ensuring that the goals of the Strategic Highway Safety Plan (SHSP) and HSIP are incorporated into engineering processes to help traditionally underserved populations.

The change to Safe Systems approach is a paradigm shift in roadway safety philosophy. Whereas before we wanted to prevent collisions, we now want to prevent death and serious injuries. Before, we wanted to improve human behavior, we now recognize that humans make mistakes and humans are vulnerable and we need to take that into account for roadway design to help drivers avoid serious injuries and deaths.

FHWA PROVEN SAFETY COUNTERMEASURES

Double down on what works. This pillar identifies FHWA Proven Safety Countermeasures through the Everyday Counts program.

General for All Alternatives

- Median Barrier – the primary purpose of this project is to install PCC MB for the purpose of reducing fatal and serious injury cross median collisions. This will assist all drivers.
- Safety Edge – is applicable as required by the appropriate Caltrans Standard Plans. This will assist all drivers.
- Road Safety Audit – was completed in 2020 for the SR 49 corridor from Grass Valley to Interstate 80 in Auburn. This segment and this project were both part of the multi-agency group conducting the Road Safety Audit.
- Corridor Access Management – this countermeasure refers to control of entry and exit points from the highway. The PCC MB meets this requirement, since it prevents both left turns from the mainline highway and from the secondary roads/driveways within the project. This will assist all drivers.
- Enhanced Delineation and Friction for Curves – this project includes the following:
    - Pavement markings –The Department uses a standard 6" wide Enhanced Wet Night Visibility (EWNV) thermoplastic striping. EWNV striping adds both a high level of initial and long-term luminescence and a multi-faceted bead to the standard thermoplastic. This multifaceted bead reflects light on wet pavement back to the driver, which coupled with the wider stripe width further enhances the visibility of the striping at both night and when the pavement is wet. These assist all drivers.
    - Post mounted delineation – all curves through the project are evaluated for compliance with California Manual of Uniform Traffic Control Devices (CA MUTCD) Section 2C.09 for additions of chevrons for curve delineation. These assist all drivers.
    - Larger signs and signs with enhanced retroreflectivity - All speed limit signs will have the size increased to the maximum allowed by the CA MUTCD for a conventional highway. Caltrans already uses Type XI retroreflective sheeting as a standard and this is the highest standard retroreflective sheeting available in the industry at this time. These assist all drivers.
    - Dynamic advance curve warning signs and sequential curve signs - all curves through the project are evaluated for compliance with California Manual of Uniform Traffic Control Devices (CA MUTCD) Section 2C.09 for additions of sequential chevrons for curve delineation. These assist all drivers.
    - Curve correction and new Gap Graded Rubberized HMA pavement –The Department will place a Gap Graded Rubberized HMA pavement as the final riding surface. This riding surface will have a higher frictional coefficient than the existing pavement. Traffic Safety does not see the need for the extra expenditure for high friction surface treatment at this time due to the new pavement being placed. This will assist all drivers.

Roundabout Specific

- Roundabouts – The FHWA Proven Safety Countermeasures website discussion from the Highway Safety Manual on roundabouts, roundabouts have a 82% reduction in severe crashes versus a two way stop controlled intersection and 78% reduction in severe crashes versus a signalized intersection. This is a critical part of the Safe System approach. This will assist all drivers.

Traffic Signal Specific

- Backplates with Reflective Borders – this is now a Department standard. This will assist all drivers.

ACCELERATE ADVANCED TECHNOLOGY

This is a new discussion and the Department is still in the learning process of what new technologies can be applied. There are a couple of advanced technologies being considered for this project:

Roundabout and Traffic Signals – The use of overhead cantilevered flashing beacons with either an Extinguishable Message Sign or Type XI sheeting retroreflective sign in advance of the roundabouts/signals is being discussed.

Traffic Signal – Because of the extended traffic queuing expected during the peak hour (discussed below) there is consideration of using an automated advanced signal warning system that would detect when queuing reached a specific point and/or traffic speeds reduced to a specific point. The system would then activate a Portable Changeable Message sign upstream to alert drivers of either slowed or stopped traffic ahead.

SAFE SYSTEM APPROACH

The goal here is to Lead Safety Culture Change by:

- Prevent Death and Serious Injuries – this project is being designed to provide a more forgiving roadway to all drivers, including young and elderly drivers, by adding a PCC MB and addressing entry and exit type collisions at both Lone Star Road and Lorenson Road/Florence Lane by replacing the existing stop signs at those intersection and providing for a safer exit movement off SR 49.
- Design for Human Mistakes and Limitations – the incidence of cross median collisions is the primary reason this project is being developed. Prevent Death and Serious Injuries has additional applicable disucssion.
- Reduce System Kinetic Energy/Control Speeding – Speeding is an expressed concern of the community that lives along and travels on SR 49. Regulatory speed limits are governed by the California Vehicle Code (CVC), Division 11, Chapter 3, Driving, Overtaking, and Passing, Section §21651, and Chapter 7, Speed Laws, Section §22349, respectively and the standard for this facility is 65 mph because it is considered to be a divided highway. The CHP has stated to the Department that they would enforce a 55 mph speed limit because it conflicts with the CVC. It should be noted that if roundabouts are selected as the final alternative then traffic will have to slow to about 25 mph to be able to enter and pass through the roundabout prior to accelerating again. This will reduce the system kinetic energy both prior to and shortly after the roundabouts. Signals will only have this impact when a red phase is in place.

- Coordinate and Share Responsibility – by providing a more forgiving roadway environment for all drivers this should make it easier for all drivers, including the young and elderly, to pass through this corridor safely.
- Proactively Address Risks – this project was identified through the Multi-Lane Cross Median Monitoring program, which is a program that specifically searches the collision database for criteria that equates to cross median collisions. The addition of PCC MB and other low-cost proven countermeasures, such as rumble strips, increased sign sizes, enhanced visibility of striping and signage, etc. are all proactive engineering measures to reduce the future potential of collisions in this corridor.

INTEGRATE EQUITY

The goal here is to ensure that the processes, strategies and outcomes of the SHSP and HSIP serve all, but particularly vulnerable and traditionally underserved populations.

According to a California State Transportation report, within the U.S. in 2017, there were 37,133 people killed in motor vehicle traffic crashes. Additionally, in the same year 2,746,000 people were injured. Traffic crashes have economic costs as well, which was estimated at $242 billion nationally. In California, nearly 3,600 people die each year in traffic crashes and more than 13,000 people are severely injured. Collectively, these traffic crashes cost California over $53.5 billion.

It is important to start by reviewing the cost of fatal, injury and PDO type collisions:

FHWA National Comprehensive Crash Costs, 2016 Dollars

Crash Severity	Comprehensive Crash Unit Costs
Fatal	$11,295,400
Suspected Serious Injury	$655,000
Suspected Minor Injury	$198,500
Possible Injury	$125,600
Property Damage Only	$11,900

The table shows the need for additional emphasis and more comprehensive consideration and analysis of fatal and serious injury collisions versus minor injury, possible injury or PDO collisions relative to the cost to those involved, to their local communities and to society. This project has identified a collision pattern requiring correction.

There are a disproportionate number of fatal and serious injury collisions on rural roadways. Consider rural versus urban area Vehicle Miles Traveled (VMT) and collision rates. According to a 2015 Federal Office of Energy report on VMT, California rural roads have 15.7% of VMT while urban roads have 84.3% of VMT (California is one of only four states with a greater than 80% urban VMT).

Now consider fatal collision rates in California for 2016 from the NHTSA which shows that 42% of fatal collisions occurred on rural roads and 53% on urban roads (3% were unknown). The Caltrans 2017 Collision Data on California State Highways data shows 42% of fatal collisions on rural roads and 58% on urban roads. A quick analysis of this data shows that almost half the fatalities are occurring on rural roadways which have 17 percent of the volume of the urban roadways. This segment of SR 49 is considered rural and the collision patterns show an equity issue.

ALTERNATIVE DISCUSSION

Three potential alternatives to provide U-turn movements were developed these included:

- A 2 lane roundabout.
- A traffic signal system with U-turns and acceleration lanes to rejoin mainline traffic in the right lane.
- A Restricted Crossing U-Turn (RCUT) movement, described below.

ROUNDABOUT

This alternative is for a 2 lane roundabout.

- Requires traffic to slow at entrance point to near 25 mph, this will provide additional benefits to slow traffic through speeds for short distances on the approaches and departures for the project corridor.
- According to the TAR, queuing should be 200 feet or less in the peak hour.
- Because of the entry, circulatory, and exit speeds being below 30 mph, collision severity should be reduced due to the lower speeds of all vehicles.
- According to the Insurance Institute of Highway Safety and FHWA roundabout typically achieve a 37 percent reduction in overall collisions, a 75 percent reduction in severe collisions and a 90 percent reduction in fatalities versus a two way stop controlled intersection. There is also at least a 75 percent reduction in injury collisions versus a signalized intersection.

TRAFFIC SIGNAL

This alternative is for a traffic signal with widening outside the existing shoulder to allow a design vehicle to make a U turn and an acceleration lane is provided for U turning traffic to rejoin the traffic flow safely.

- According to the TAR, queuing for the traffic signal systems will be between 1100 and 1175 feet in the peak hour in the build year.
    - The queuing for the traffic signal system will require additional advanced warning, to include flashing beacons on an overhead mast arm over a traffic lane with either an Extinguishable Message Sign or an oversized standard sign.
- Traffic signals result in an increased number of collisions but a reduction in severity versus a two way stop controlled intersection.

RCUT

An RCUT has a primary design feature of only allowing right turn movements from the secondary road.

- For clarification purposes the term RCUT is often used interchangeably with J-Turn, however, there are differences which are important to this discussion.
    - The RCUT allows traffic at the secondary road a right turn movement only, they must then move into the left lane and then into the U turn pocket in the existing median. Once in the median, drivers must cross opposing traffic lanes to finish their U-turn outside the opposing travel lanes and then have an acceleration lane provided to rejoin the mainline traffic flow in the right lane and then proceed downstream to make their right turning movement. Standard design provides a loon turn, which only provides approximately 425 feet for U turning traffic to rejoin the mainline traffic flow, however, with the prevailing traffic speed and volumes,

respectively, it was determined than an acceleration lane was required at this location in order to achieve optimal safety results.

  - The J-Turn, which is used most often in the Midwest, has a slightly different concept in that it requires a much wider median area. Drivers have a median side deceleration lane and make their U-turn completely within the median area and then have an acceleration lane to rejoin traffic in the left lane of travel. Drivers must then move to the right lane to be able to make their right turning movement downstream.

- The significant difference between the RCUT and J-Turn is the cross traffic turning movement. For the J-Turn, drivers are making multiple merging movements across traffic lanes versus the RCUT where drivers have to cross the opposing lanes of travel.
- Note that when drivers make a standard 90 degree left turn movement they are able to accelerate across traffic and move onto the side street while continuing to accelerate to the posted speed limit. The RCUT requires drivers to make a 180 degree U-tun movement and once drivers start that movement, they have to maintain a much slower speed to make the 180 degree turn and to get onto the acceleration lane, where they can accelerate to rejoin the mainline traffic flow. This means that drivers making a RCUT movement have additional time being exposed to oncoming/cross traffic due to slower speeds versus making a standard left turn movement. This will be magnified even further if the vehicle is larger, such as a tractor trailer, RV, or fire truck, or is towing a trailer, whether that is an RV, animal, or work product trailer, respectively.
- RCUT also requires a more complicated pedestrian movement that is not completely tangential across the roadway and requires the pedestrian to cross the traffic lanes tangentially, then make a diagonal movement across the RCUT then cross the opposing lanes tangentially on the opposite side of the cross street from where the pedestrian started. The issue with this would be the challenge for the visually impaired. The Department would have to place curbing to guide the visually impaired pedestrian along the desired path, however, curbs are not desirable on high speed roadways due to the potential for an errant driver to leave their assigned lane and vault the curb.

Appendix I. Public Comments and Responses

1. Joe Parisi

Caltrans, District 3 Marysville / Sacramento
703 B Street
Marysville, CA 95901

May 25, 2021

Mr. Amarjet A. Benrlipal, District Director
Ms. Raquel Borrayo, Contact

Subject: Caltrans S.R.-49 Safety Barrier Project

Dear Ms. Borrayo,

The Caltrans S.R.-49 Safety Barrier Project does not address the existing Placer County SIGNIFICANT, LIKELY, and CATASTROPHIC wildfire risk to Place County residents life, animals, private property and public safety during a wildfire emergency evacuation, as documented and illustrated in the attached PRISM Engineering SEIR Traffic Engineering Review and Findings of the section of S.R.-49 from Lone Star Road to Dry Creek Road and connecting arterics.

Additionally,the County CLARIFICATIONS TO THE RECOMMENDEED CONDITIONS OF APPROVAL for the Hidden Falls Regional Park Trails Expansion Project (Reduced Project) (PLN19-00187), the EXPANSION DRAFT EMERGENCY RESPONSE PLAN and the VEGATION, FUELS, RANGE MAINTENANCE PLAN will unconscionably increase that risk by adding an additional, determined 500 vehicles a day, to the very dangerous section from SR-49, Lone Star and Bell Road to the Hidden Falls Expansion Project 30 miles of new trails.

The above recommended conditions and plans do not address the Planning Commission instructions to "provide New Access Roads", as one was recommended in the PRISIM Engineering, Review of SEIR Traffic Engineering Study, or the Board of Supervisors instruction to "use other entrances or correct it" to County Staff.
As of this date Staff has not identified any new public motorized Access Roads, or other public motorized entrances to the Harvego Preserve 30 miles of new trails as directed, or how Staff intends to prevent misuse of private roads and to start plans for signage, towing, etc. (The private Auburn Valley Road, the Curtola Ranch / Driveway Road, and all area private Roads).

Taking all of the above into consideration; how will the existing Placer County wildfire evacuation problem, and the additional Hidden Falls Expansion traffic into the S.R-49 Barrier Project, make the stretch of S.R.-49 from Lone Star Road to Dry Creek Road safer, and will not increase an even more dangerous wildfire and traffic risk to the surrounding Communities and residents of Placer County that are in the Project area as illustrated on page 27 of 35 in the PRISM Study?

It appears that Caltrans and Staff have given no consideration to the impact of an insane increase of traffic into the S.R.-49 Safety Barrier Project and to the Hidden Falls Expansion during a wildfire emergency evacuation.

Respectfully,

Joe Parisi
8860 Auburn Valley Road
Auburn, CA 95602

Attachment 1:

REVIEW OF SEIR TRAFFIC ENGINEERING STUDY

Relating to Hidden Falls Regional Park Expansion Project

SEIR Traffic Study

Prepared for:

K.O.R.S (Keep Our Roads Safe)
Auburn Valley Property Owners Association
P.O. Box 7993
Auburn, CA 95604-8138

In association with
Protect Rural Placer County

May 18, 2020

Traffic Engineering Review is Authored by:
Grant P. Johnson, TE

PRISM ENGINEERING
Traffic Engineering & Transportation Planning

This traffic engineering review has been prepared and certified by Grant P. Johnson, TE, Principal. Lic #1453

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EXECUTIVE SUMMARY

PRISM Engineering's Grant P. Johnson, a registered CA Traffic Engineer, was hired by local residents consisting of "K.O.R.S" (Keep Our Roads Safe) and "Protect Rural Placer County" to review the traffic study recently completed and contained in the Hidden Falls Regional Park Trails Expansion Project Subsequent Draft Environmental Impact Report (SEIR) dated February 2020.

The purpose of this review was to examine the quality of the traffic study, its assumptions and procedures, and to also make a personal Traffic Engineer visit to the local street system and personally verify study findings, and investigate the situation independently in the month of April 2020. As a result of that detailed survey which included video survey of road conditions, widths, traffic control, signs and striping, and sight distance for curves, this report was completed to document all findings of significance. Many deficiencies were found in the traffic study itself, such as:

- Trip generation rates for Hidden Falls Regional Park prepared not in accordance with industry standards and procedures to develop trip generation rates as set forth by ITE.
- Intersection levels of service (LOS) were calculated improperly using incorrect data factors for "peak hour factor" which resulted in a much better than actual result.
- Safety relating to critical wildfire evacuation traffic flows was not even mentioned in the report, and is inadequate as it stands, because an EIR must consider safety as an environmental impact according to the most current California CEQA law. The California Environmental Quality Act, also known as CEQA, requires analysis of the potential effects of a project on the environment. CEQA defines "environment" to mean "the physical conditions which exist within the area which will be affected by a proposed project..."
    - This includes "any potentially significant impacts of locating development in other areas susceptible to hazardous conditions (e.g., floodplains, coastlines, ***wildfire risk areas***) as identified in authoritative hazard maps, risk assessments or in land use plans, addressing such hazards areas."

The California Supreme Court also repeatedly noted CEQA's concern for public health and ***safety*** ("the Legislature has made clear that public health and ***safety*** are of great importance in the statutory scheme (E.g., §§ 21000) "emphasizing the need to provide for the public's welfare, health, safety, enjoyment, and living environment." In summary, this report documents many situations where the proposed project will severely impact traffic in an emergency evacuation situation (***safety related***), and since Placer County has already identified this problem/risk/hazard in their document ***Local Hazard Mitigation Plan Update, March 2016,*** with more relevant portions for the study area in: https://www.placer.ca.gov/DocumentCenter/View/368/Annex-A-City-ofAuburn-PDF, where ***wildfire risk*** was ranked in Table A4 as the highest risk to Placer County residents (and as an extension, to those who would come and visit the regional parks).

See https://www.placer.ca.gov/1381/Local-Hazard-Mitigation-Plan for more information.

FINDING #1: TRAFFIC STUDY, OVERALL REVIEW SHOWS INADEQUACIES

The procedures used in the Hidden Falls Regional Park Trails Expansion Project traffic impact study were done in accordance with standard traffic engineering practice, with the exception of the trip generation rate development. The study appears to be based on a scope of work that was prepared in accordance with Placer County procedures and methodology for traffic studies, and how traffic analyses are typically performed. Placer County has adopted methodologies for determining the significance of traffic impacts within the context of the Level of Service (LOS) goals established by the General Plan and local community plans. These typical methods include, determining changes to intersection levels of service, as well as roadway segment levels of service. The problem with guidelines is that they often are generic or uncalibrated to local conditions, and do not take into consideration specific details that demand a better or more thorough analysis and review.

That being said, the traffic study's scope of work is deficient to adequately address the very real transportation challenges that exist in an area where wildfire danger and evacuation is ranked by Placer County as the most critical and significant hazard that faces property owners (and users of parks) within the study area defined in the SEIR. Bell Road, which serves as a major connector road and as the only north south alternative to SR 49, is especially constrained for evacuation capacity. If SR 49 were to ever be closed again due to wildfire danger like it was in 2009, Bell Road would face an even more critical evacuation situation because traffic volumes continue to grow on Bell Road due to winery expansions, park expansions, and parking lot construction (such as the proposed Twilight Ride Parking Lot just south of Cramer Road).

For these reasons, the traffic study is deficient to address safety and capacity issues based on an inadequate scope of work. The following paragraphs summarize how these deficiencies need to be addressed. Additional detailed sections of this report address more specific elements of the traffic study review process.

FINDING #2: TRAFFIC STUDY DEFICIENCIES, SCOPE OF WORK DEFICIENT

- *Traffic Accidents at SR 49 and Lone Star Road Intersection were not addressed in the report, and should have been.* The SWITRS database shows that there were four serious injury accidents at this intersection between 2013 and 2017, three broadside and one head-on collision. This is a significant amount of serious injury accidents, and based on the high speed nature of these regularly occurring accidents, the intersection should have been identified as having a significant safety problem, especially in light of how Lone Star Road has low volumes compared to SR 49 mainline volumes (1/30th of the total volume of SR 49). This means that with only a 1000 ADT for Lone Star Road, there has still been one serious accident nearly every year for Lone Star vehicles trying to interface with SR 49 traffic. Table 8 in the SEIR traffic study, Collision Analysis, completely misses this fact as there is only one accident shown on Lone Star Road, and it is not at this intersection. This is because the table and the analysis only looked at road *segment* accidents which are rarer than intersection accidents.
- *Roadway Analyses were based on a generic Daily Volume of traffic*, and did not consider peak hour flow rates, which have been critical in times past, especially in an emergency evacuation. The traffic study should have looked at peak hour roadway segment flows, and not relied on a generic

daily volume which is meaningless in a traffic operations context, but only serves as a planning tool for possible road sizing needs.

- *Intersection Analyses for Level of Service (LOS) were not done correctly* to take into account Peak Hour Factors (PHF) which were known (these are shown in the appendix traffic count data), but they were not used. A generic intersection average for the PHF was used. This results in a better-than-real-world LOS calculation, and misses impacts from the project and cumulative traffic calculations.
  - At SR 49 and Lonestar for example, the WB approach delay was shown as 214 delay seconds, an LOS F condition, but *when we recalculated it using the correct PHF for this and all other movements at the intersection, the result was 354 seconds of WB approach delay, almost twice as long, amounting to an average six minute delay for this approach!*
  - The overall delay for all vehicles at this intersection was 5.4 seconds of delay (LOS A) for the SEIR traffic study, but with our corrections this was now 12.6 seconds of average delay (LOS B). This is a significant difference in results because of the use of the wrong PHF. The SEIR traffic study should use the correct PHF data that was contained in the appendix of the traffic study, for each approach and turn move.
- *The study did not analyze Bell Road at Joeger Road, perhaps the most critical and key intersection* for residents in the vicinity, an intersection which has a four way stop control. The traffic study scope should have included this intersection because it is a chokepoint intersection in case of fire evacuation, and more especially because of the proposed large parking lot at the Twilight Ride location which will hold 140 vehicles (40 of them being trucks with horse trailers).
  - *This intersection was critical and significantly failed* during the August 31, 2009 fire evacuations which closed SR 49 north of Bell Road and up to Lone Star Road. Delays in excess of 1.5 hours were typical for drivers using Bell Road southbound from Lone Star Road to Joeger, an unacceptable and dangerous condition because of extreme 3 mph stop and go delays in a time where fire is spreading and could trap and/or kill drivers stuck in traffic.
  - *No changes to the Bell Road and Joeger Road intersection design have been made* by Placer County since that time to ensure adequate throughput and capacity in case of fire or evacuation. *During a fire-related evacuation, this intersection should be considered a dangerous chokepoint*, introducing in excess of one-hour delays for drivers stuck on Bell Road trying to get out to safety.
  - *The traffic study should have addressed this situation and made recommendations for mitigation of the problem.*
- *The SEIR traffic study did not take into account specific vertical sight distance and grade issues.* The Bell Road suggested improvements for the proposed Twilight Ride parking area just south of Cramer Road do not address the vertical sight distance issues and deficiencies, especially for southbound Bell Road traffic traveling at speeds that may be too fast to stop in time. There is a long down-grade and vertical dip in the road that creates a vertical blind spot for southbound Bell Road traffic near the location of the proposed Twilight Ride parking lot driveway. *This vertical sight distance constraint is further aggravated by the potential for pickup trucks pulling large horse trailers traveling in the southbound direction, and which need twice the stopping distance of an ordinary car.* The vertical sight distance on Bell Road southbound to the proposed Twilight Ride parking lot driveway is approximately 600 feet.

  - The speed limit on Bell Road ranges from 35 mph south of Lone Star Road, to 40 mph south of Hubbard Road, but vehicles often go faster, especially because of downhill grades. The minimum stopping sight distance for 40 mph *on a flat road* with dry pavement is 325 feet for a normal vehicle. At 55 mph this is 550 feet (as per AASHTO Green Book)[1].

    Adding *a 6% downhill grade* into the mix *increases* this stopping distance *by 40%* for 40 mph, *and 95%* more for 55 mph (see Table 2 AASHTO Green Book).
    - So a car traveling at 55 mph on a grade would need 1000 feet, not 550 feet, and a car traveling at 40 mph on a grade would need 460 feet, not 325 feet.

    Adding a *Truck and Horse Trailer* into the equation increases the stopping sight distance by an additional 54% as per AASHTO. Trucks with trailers have much more difficulty stopping (see Table 6 from AASHTO Green Book). For example:
    - *A truck with trailer going 40 mph* on a flat road needs 500 feet rather than 325 feet for a car, a 54% increase in distance needed. If there is also a 6% downhill grade like there is north of the Twilight Ride proposed parking lot driveway, 40% more distance is needed, *for a total of 700 feet at 40 mph.*
    - *A truck with trailer going 55 mph* needs 875 feet rather than 550 feet for a car (54% increase in distance needed). If there is also a 6% downhill grade, 40% more distance is needed, *for a total of 1225 feet at 55 mph.*
- *CONCLUSION: A truck with horse trailer would need at least 700 feet to stop* on southbound Bell Road at a 40 mph speed on the downhill roadway segment of Bell Road just north of the proposed Twilight Ride parking lot driveway. In the event that another vehicle is pulling out of the parking lot, and if they block the road temporarily with a trailer, making a wide and long turn, then oncoming vehicles will need to actually stop to let that vehicle with a long trailer finally completely enter their own lane after crossing the yellow centerline for a time to get completely out of the parking lot. During that maneuver, especially if making a right turn, will block the entire road in both directions in the process. If the speed is higher, then more stopping sight distance is needed. Since there is proposed parking for 40 of these trucks with horse trailers, this could be a significant critical impact to existing sight distance issues on Bell Road, on a regular basis, and should have been discussed and addressed in the SEIR traffic study.
- *The traffic impact metrics used in the Hidden Falls traffic study were not appropriate to measure the true impact of the project, including safety issues*, because the metrics used only look at LOS on low volume roads, resulting typical LOS A conditions with or without the project expansion, even if the park literally doubles the local traffic volumes on some roads. During an evacuation situation, the Twilight Ride parking lot has 140 vehicles that could potentially create a gridlock situation on a roadway that has already experienced near gridlock situation during a wildfire evacuation. This impact needs to be properly addressed, and it was not adequately addressed in the SEIR. Only mentions of a left turn pocket were given, but the vertical sight distance issues and constraints are a real factor in the safety of Bell Road.
  - The real effect of all of the additional traffic, as shown in the TIS are as follows

[1] TABLE 1 AASHTO CRITERIA FOR STOPPING SIGHT DISTANCE (J)
https://pdfs.semanticscholar.org/81b2/917bcc2a0b582674d50dd80ffcad7e0f4985.pdf

Curtola Ranch Parking: 119 regular spaces, 5 ADA, and 10 equestrian spaces
Garden Bar Parking: 45 regular spaces, 5 ADA, and 20 equestrian spaces
Twilight Parking: 96 regular spaces, 4 ADA, and 40 equestrian spaces
Grand Total of vehicles using the parks = 260 regular vehicles, 70 pick-up trucks with horse trailers, and 14 more spaces for ADA. This is an additional 345 vehicles on the road in addition to the local residents who live there.

- *Paved Turnouts were suggested as a potential mitigation in the SEIR for Garden Bar Road, but our personal drive through of this roadway indicated a very difficult task to create such turnouts at any reasonable distances*, and the potential for a complete traffic jam grid lock as very real under evacuation circumstances. Most of the roadway varies between 11 feet wide and 14 feet wide, far below the minimum 18-foot width. PRISM Engineering surveyed these roads and Figure 1A shows some samples of the video survey where roadway widths would only accommodate one direction of traffic. In the PRISM Engineering horse and trailer turn study, the passing constraint was very real even on roads that were approximately 21 to 22 feet road width by comparison. It is certain that Garden Bar Road constraints would be a very real safety and capacity impact to two-way traffic in an emergency, and passing turnouts would NOT be sufficient given that they are proposed to be more than 100 yards apart (400 feet).
    - On Garden Bar Road in most locations, incoming Fire Response vehicles could not pass outcoming residential and Hidden Falls Park vehicles. If many cars are platooning, backing up to a "turn out" may not be possible if other cars are in the way. The result could be catastrophic to human life, let alone property structures if gridlock were to occur and a fire is approaching.
    - Garden Bar Road widths are primarily in the range from 11 to 14 feet, nowhere near the minimum 18-foot widths needed.

FIGURE 1A. SEVERE ROADY WIDTH CONSTRAINTS. LOS ISSUES. SAFETY IN EVACUATION ISSUES.

Dog Bar Rd. Car off road to pass, a 14-foot-wide section.

Dog Bar Rd. 12.5 feet wide: measurements taken.

- *An Evacuation Plan for Wildfire Scenarios is Needed, but was not addressed in the SEIR traffic study.*
    - The County does not have a specific fire evacuation plan for the area surrounding Hidden Falls Park.

      The County only provides general warning about ground clearance to structures, how to "harden" your home's roof, etc., but does not have any advice or program on how

traffic would best be directed or flow in an emergency evacuation. *There is the potential for drivers to end in a gridlock situation without a plan in place.*

- The traffic study does not address this very real potential hazard.
- The SEIR is deficient because it does not address the safety issue for fire evacuation in this area.

  There has been a previous and critically significant evacuation problem, a level of service and delay problem, especially for Bell Road traffic at the Joeger intersection and backing up to Auburn Valley Road, but this problem could be replicated elsewhere depending on road closures and redistribution of traffic patterns.

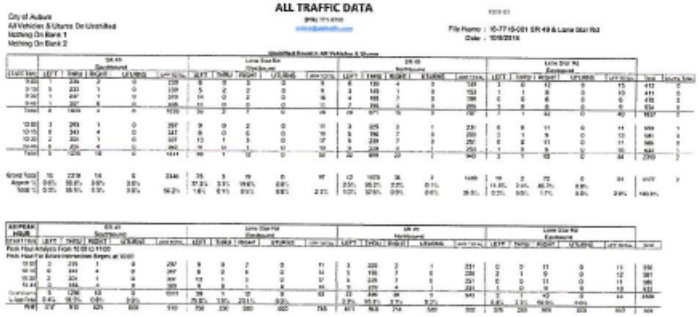
- *It appears that the trip generation rate, made from a single source set of assumptions, needs to be further clarified and enhanced with more data. Our review shows that the trip rates and distributions are incorrect.*
    - A lot of assumptions were made in the traffic study to develop the Hidden Falls Regional Park trip generation rate. It appears that it was done based on how many permits were issued, a daily volume hose count, and a turn percentage assumption at the intersection of Mears Drive and Mount Vernon Road. This may or may not be accurate since there is also residential traffic that uses this intersection that has nothing to do with the park, but is influenced by traffic patterns from the numerous homes that also share Mears Drive, probably with a higher outbound percentage of traffic flow on Saturday mornings. It did not make sense that the outbound traffic from the park during the peak hour in the morning was higher than the inbound traffic. Table 9 in the SEIR traffic study shows that on a Saturday, the peak is assumed to be 21 cars in and 42 cars outbound. Since this is at 10 am, it does not make sense that most will be leaving when the day is beginning. This needs to be explained or corrected, because it is non-intuitive and does not make sense with other "park" uses in the national industry standard ITE Trip Generation Manual which show the opposite traffic pattern. The ITE Trip Generation Manual shows more trips coming inbound to parks in the morning peak hour, and more trips going outbound in the evening peak hour, whether it be at City Parks, County Parks, or State Parks. They all have this same pattern, but in the SEIR traffic study for Hidden Falls the direction of traffic during the morning peak hour is reversed from the norm and is not consistent with other trip rates for similar uses.
    - The Institute of Transportation Engineers (ITE) publishes trip generation rates based on national averages for similar uses within many categories of land uses (the industry standard). The ITE Trip Generation has specific guidelines on how to develop a new or custom trip generation rate, which requires first to take many different samples at different locations, and use averages. This was not done in the SEIR even though a trip generation rate was custom made. As a result, the trip generation of the project cannot be acceptable in its current form. Building a trip generation rate based on assumptions such as permits issued, is not the industry standard practice.

FINDING #3: TRAFFIC COUNT DATA WAS NOT FULLY UTILIZED IN ANALYSES

PRISM Engineering conducted a new traffic count at the busiest study intersection of SR 49 and Lone Star Road to verify traffic volumes and turning movements. We also examined the appendix data of the SEIR traffic study to see the details of what was collected and what was used.

The SEIR appendix contained the following traffic count sheet for this intersection which spells out the individual PHF for each turning movement. However, in the calculation sheets, only the generic overall average PHF for the whole intersection was used for each of the 12 turning movements. This defeats the purpose of the PHF and actually glosses over the peaking characteristics of the smaller volume turning movements as explained in the paragraphs that follow. Figure 2A below shows this data.

FIGURE 2A. SEIR APPENDIX TRAFFIC COUNT DATA FOR SR 49 AT LONE STAR ROAD.


ALL TRAFFIC DATA

PRISM Engineering conducted a new traffic count at the study intersection of SR 49 and Lone Star Road and found that the northbound through movement of SR 49 during the noon peak hour had a volume of 752 vph. The Hidden Falls Regional Park traffic study had a Saturday peak (10-11 am) of 899. The difference can most likely be attributed to the reduction in volumes on the highway due to the "Stay at Home" guidelines in place for the Covid-19 pandemic. The difference was small actually, resulting in about a 15% reduction in mainline SR 49 through traffic, but with no significant difference to Lone Star Road volumes. The PRISM Engineering turning movements to and from Lone Star Road at SR 49 were as follows:

- NBR=30 vph comparing to 20 vph in the regular SEIR traffic study count.
- NBL=32 vph comparing to 24 vph in the regular SEIR traffic study count.
- The outbound traffic from Lone Star Road EBR was 16 vph compared to 40 vph in the SEIR count, and the EBL was 12 vph compared to 3 vph in the regular SEIR count.

Note in Figure 2B below (a close-up of Figure 2A), that on the bottom line of the table there is a row called PHF (Peak Hour Factor), and that there is a PHF for each of the 12 turning movements (the WB approach WBL=0.417, WBT=0.910, and WBR=0.625, and the overall average of all southbound volumes has a PHF of 0.910).

FIGURE 2B. TRAFFIC COUNT DATA FROM SEIR APPENDIX, SHOWING PEAK HOUR FACTORS

AM PEAK HOUR	Lone Star Rd Westbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP. TOTAL	Total
Peak Hour A						
Peak Hour F						
10:00	9	0	2	0	11	550
10:15	8	0	6	0	14	581
10:30	13	1	3	0	17	586
10:45	9	0	1	0	10	633
Total Volume	39	1	12	0	52	2350
% App Total	75.0%	1.9%	23.1%	0.0%		
PHF	.750	.250	.500	.000	.765	.928

Also, note that on the far right the overall intersection average of ***all*** approaches for PHF was shown to be 0.928. In the SEIR only the 0.928 (or 0.93) was used for ***all*** approaches, even though this was not correct. The same method was used for all study intersections in the traffic study, only using the *overall intersection volume totals* to calculate a PHF, which is not the proper use of the PHF. In fact, there are significant differences in the calculated level of service. The following figure (Figure 2C), is the SEIR capacity calculation for SR 49 at Lone Star Road, using a 0.93 PHF generically overall, resulting in 4.9 seconds of average delay, and 195.6 seconds of delay for the WB approach . This differs significantly from the result when using the actual PHFs as contained in the Appendix of the SEIR.

FIGURE 2C. SEIR INTERSECTION LOS ANALYSIS CALCULATION, SR 49 AT LONE STAR ROAD.

HCM 6th TWSC — EXISTING SATURDAY
1: SR 49 & LONE STAR RD — 03/18/2019

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	40	39	1	12	24	899	20	5	1286	10
Future Vol, veh/h	3	1	40	39	1	12	24	899	20	5	1286	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	60	-	-	60	300	-	200	300	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %		0			0			0			0	
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93

Approach	EB	WB	NB	SB
HCM Control Delay, s	28	195.6	0.3	0
HCM LOS	D	F		

Peak Hour factors (PHF) used in SEIR were not what the count data indicated. The SEIR used 0.93 PHF for all turning moves, even though the data shows WBL=0.417, WBT=0.910, and WBR=0.625.

PRISM Engineering re-calculated these numbers to show the significant difference in results that takes place when the proper PHFs are used. Figure 2D shows the revised HCM 2010 calculation using the same traffic volumes, but corrected PHF.

FIGURE 2D. REVISED HCM 2010 LOS CALCULATION USING ACTUAL PHF BY TURN MOVE.

HCM 2010 TWSC
3: SR 49 & Lone Star Rd 05/14/2020

Intersection												
Int Delay, s/veh	12.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↱		↔	↱	↰	↑↑	↱	↰	↑↑	↱
Traffic Vol, veh/h	3	1	40	39	1	12	24	899	20	5	1296	10
Future Vol, veh/h	3	1	40	39	1	12	24	899	20	5	1296	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	-	-	25	-	-	50	400	-	325	200	-	300
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	25	91	75	25	50	61	94	71	42	91	63
Approach	EB			WB			NB			SB		
HCM Control Delay, s	59			$ 353.6			0.5			0.1		
HCM LOS	F			F								

The results now show that the EBL is actually at LOS F conditions, and not LOS D as shown in the SEIR. Also, the WBL is shown to have 6 minutes (354 secs) of average delay and not the 3 minutes (196 secs) shown in the SEIR. Also, the overall intersection average went from 5.1 seconds of average delay to 12.5 seconds, more than double, and worsening the overall LOS from LOS A to LOS B.

LOS is calculated with peak ***hour*** volumes. However, traffic counts are taken with 15 minute intervals, to catch the highest impact. The purpose of the PHF is to determine the impact of the busiest 15-minute period where traffic flows are significantly higher. This is the standard method of calculating LOS, to incorporate an accurate PHF to best represent real traffic peaking conditions, and not to mask the real situation in an hourly average divided by four, by using a higher or default value of PHF. The Hidden Falls SEIR appendix for traffic counts shows that the PHF ranges in counts varies from 0.25 to 0.99, where the calculated LOS is worse with a lower PHF. This could be the difference between LOS D and LOS F as was the case for the calculation in Figure 2D for the EBL movement. In the SEIR, only a single value of PHF was used, an overall intersection average. This is not the industry standard to calculate LOS this way when adequate data is present, but was a decision of the analyst, as the software program allows for a specific PHF for each turning movement (12 total PHFs at a four way intersection). The data in the appendix had the PHF details in the traffic counts, but the actual analysis using averages resulted in much better levels of service.

PRISM Engineering conducted a video traffic count of the intersection of SR 49 at Lone Star Road, and these counts (both ground level and aerial views) can be viewed at the PRISM Engineering website URL as follows:

http://www.prism.engineering/placercountykors.html

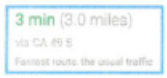
Scroll down to the video entitled: "Aerial View of Traffic Count at: S.R. 49 and Lone Star Road."

These videos show the traffic patterns, and also how difficult it is for vehicles on the side street Lone Star Road, to enter into the SR 49 flow of traffic, or to even cross the road.

FINDING #4: CRITICAL TRAFFIC ACCIDENTS WERE NOT INCLUDED IN REPORT

Four critical severe injury broadside and head-on traffic accidents at the SR 49 / Lone Star intersection were not included or discussed in the report, even though it is one of the study intersections. This omission is critical, because it misses the very serious nature of the danger that currently exists at the SR 49 highway at this location.

SR 49 has a five-lane cross section at the Lone Star Road intersection, and the speed limit on the highway is 65 mph at Lone Star Road (65 mph speed limit from 0.3 miles north of Dry Creek Road all the way to Combie Road). The *average* free-flow speed of motorists is around 60 mph (according to Google Maps which regular samples the speeds of vehicles). However, the actual speed limit here is 65 mph. Entering high speed traffic that has 65 mph freeway speeds, from a side street from a dead start, is difficult and dangerous during high peak time periods. Six lanes of traffic must be negotiated, two left turn pockets on SR 49, and four high speed lanes of traffic for the through lanes on SR 49. As stated previously, there have been four (4) *serious injury* accidents at this intersection in the last five recorded years (2013 to 2017)[1], three broadside collisions, and one head-on collision.



Caption: Google Map Time for SR49 near Lone Star Rd

The high speed traffic mixed with low speed traffic crossing the path of high speed traffic has contributed to four broadside type accidents at this location. Figure 3A shows how many accidents are taking place in the vicinity of the study area, north of Auburn, CA, for the past 5 years. Figure 3B details the accidents which took place on SR 49 in Placer County, totaling 275 collisions (where 9 people were killed, and 386 people were injured).

Several mitigations for the SR 49 Lone Star Road intersection were suggested in the SEIR traffic study, such as a modern roundabout, or a traffic signal installation, however, the funding is not available, and no assignment of mitigation was made for the project. The language in the SEIR states that the traffic impacts from the Hidden Falls Regional Park expansion are significant but unavoidable at the SR 49 and Lone Star Road intersection. This is not to say that the traffic safety impacts are unavoidable, because they are avoidable if proper mitigation is recommended to improve safety, rather than the focus only given to LOS changes at the intersection. Given the fact that there is an average of one significant accident every year at this intersection alone, this indicates that the situation is not safe and requires further mitigation before additional traffic is allowed to further exacerbate the safety deficiency. The accident history for this intersection was not identified or discussed in the SEIR traffic study. Only the roadway segment of Lone Star Road was shown with one accident, but there was no discussion of the intersection accident history.

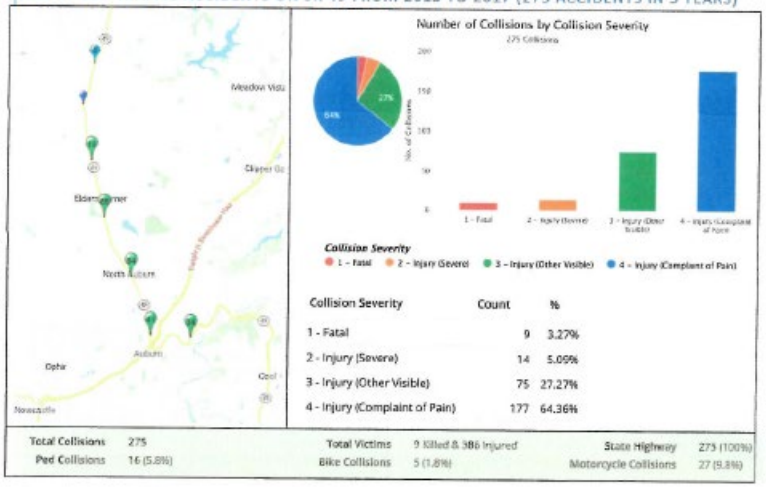
[1] https://tims.berkeley.edu

TRAFFIC ENGINEERING REVIEW AND FINDINGS RE: HIDDEN FALLS SEIR TRAFFIC STUDY

FIGURE 3A. TRAFFIC ACCIDENTS IN PLACER COUNTY UNINCORPORATED AREAS

Source: TIMS and SWITRS

FIGURE 3B. TRAFFIC ACCIDENTS ON SR 49 FROM 2013 TO 2017 (275 ACCIDENTS IN 5 YEARS)



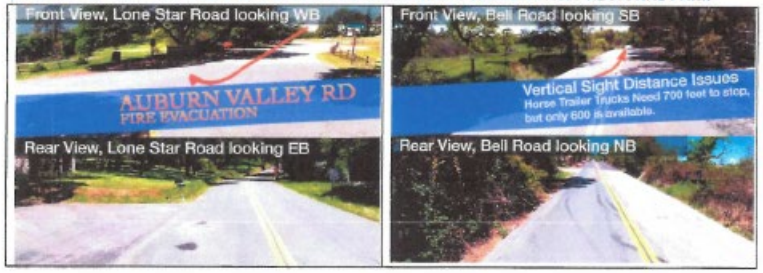
Collision Severity	Count	%
1 - Fatal	9	3.27%
2 - Injury (Severe)	14	5.09%
3 - Injury (Other Visible)	75	27.27%
4 - Injury (Complaint of Pain)	177	64.36%

Total Collisions	275	Total Victims	9 Killed & 386 Injured	State Highway	273 (100%)
Ped Collisions	16 (5.8%)	Bike Collisions	5 (1.8%)	Motorcycle Collisions	27 (9.8%)

FINDING #5: LOCAL ROADWAYS HAVE SIGNIFICANT CAPACITY CONSTRAINTS TO TRAFFIC FLOWS (I.E. EVACUATION), AS WELL AS SIGNIFICANT HORIZONTAL CURVE CHALLENGES, SIGHT DISTANCE ISSUES.

PRISM Engineering drove all roadways surrounding the Hidden Falls park including SR 49 between Lone Star and I-80, Bell Road, Joeger Road, Cramer Road, Lone Star Road, Atwood Road, Mount Vernon Road, Mears Drive, Mount Pleasant Road, Garden Bar Road, Big Hill Road, Country Club Lane, and Auburn Valley Road. In total, about 40 miles of roadway were driven and documented with video using a roof-mounted camera system, one camera for each direction, to film roadway width variations, the actual condition of pavement (or lack thereof), traffic control devices installed such as signs and signals, pavement markings, and documenting horizontal and vertical sight distance constraints and roadway alignment in general. Figure 4A shows some samples of the kind of information collected with the camera mounted drive through.

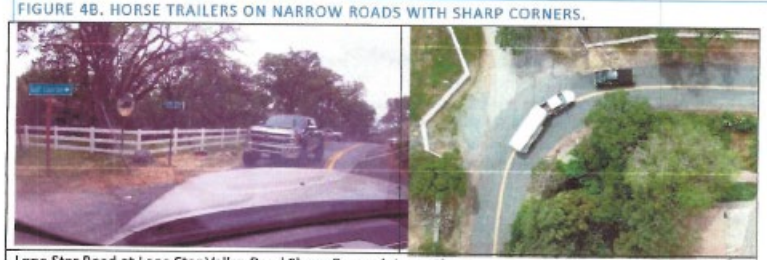
FIGURE 4A. VIDEO SURVEY. LOCAL ROADS SURROUNDING HIDDEN FALLS REGIONAL PARK



A video was prepared for Bell Road and Lone Star Road (14 minutes). It can be viewed in its entirety at the following website URL: http://www.prism.engineering/placercountykors.html and scroll down to the video entitled: "Wildfire Evacuation Drive Through Analysis: Detailed Video Inventory, Commentary." The video shows the various roadway constraints that exist (widths, curves, sight distance, alignment, etc.), as well as where fire evacuation merges will take place. An additional video was prepared to show the extreme constraints to traffic flows that take place at certain sharp turns, which pose unique challenges especially in situations where pickup trucks towing large horse trailers or other large vehicles come into conflict with opposing traffic on a sharp curve. Figure 4B shows some samples of how pickup truck with horse trailer roadway constraints turned out in our survey, and the entire video can be seen at the following website URL:

http://www.prism.engineering/placercountykors.html and scroll down to the video entitled: "Horse Trailer, Large Vehicles, and Narrow Road Alignment and Sight Distance Constraints."

FIGURE 4B. HORSE TRAILERS ON NARROW ROADS WITH SHARP CORNERS.



Lone Star Road at Lone Star Valley Road Sharp Corner Intersection.

Cramer Road at Hill Crest Sharp Corner west of Oak Knoll Lane.

This survey was conducted with very minimal traffic volumes, however, if there were a fire evacuation with stop and go traffic, the result could very likely be a traffic grid lock if a turn cannot be negotiated, and if traffic cannot back up to make room, etc.

FINDING #6: CUMULATIVE TRAFFIC TOTALS USED IN SEIR STUDY ARE OK.

The cumulative traffic growth assumptions used in the SEIR traffic study were reviewed in light of available Caltrans traffic count data. The growth rate used in the SEIR was 2% traffic increase each year, for 20 years (a 1.49 factor of growth overall). The growth rate calculated by PRISM Engineering using the Caltrans data in Table 6A below, was also 2% per year for SR 49 north of Bell Road (nearest to the Lone Star intersection with SR 49). Based on this alone, the assumptions in the SEIR for regional growth agree with long-term traffic growth trends. Figure 5A documents the Caltrans traffic counts on SR 49 in the vicinity of Bell Road and past Lone Star Road.

FIGURE 5A. CALTRANS TRAFFIC DATA FOR SR 49 IN PLACER COUNTY, YEARS 2007 AND 2017.

CA.GOV OPEN DATA PORTAL

Tabular data of AADT Volumes 2007

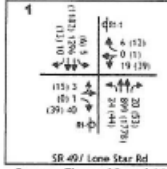
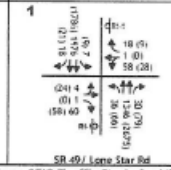
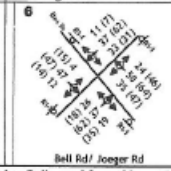
_id	District	Route	County	Postmile	Description	Ahead_Peak_Hour	Ahead_Peak_Month	Ahead_AADT
2350	3	49	PLA	5.21	LUTHER ROAD	5560	59000	48500
2351	3	49	PLA	5.85	ATWOOD ROAD	5560	59000	51000
2352	3	49	PLA	6.69	COTTAGE DRIVE	3660	42000	41000
2353	3	49	PLA	6.36	AUBURN, BELL ROAD	2730	30000	28500
2354	3	49	PLA	7.427	DRY CREEK ROAD	2650	29500	28500
2355	3	49	PLA	R8.973	LORENSEN RD	2650	30000	28000
2356	3	49	PLA	11.373	PLACER/NEVADA COUNTY LINE	0	0	0

Tabular data of AADT Volumes 2017

_id	District	Route	County	Postmile	Description	Ahead_Peak_Hour	Ahead_Peak_Month	Ahead_AADT
2331	3	49	PLA	5.21	LUTHER ROAD	3660	44000	42000
2332	3	49	PLA	5.85	ATWOOD ROAD	3660	42000	40000
2333	3	49	PLA	6.69	COTTAGE DRIVE	3660	42000	40000
2334	3	49	PLA	6.36	AUBURN, BELL ROAD	2980	37000	34000
2335	3	49	PLA	7.427	DRY CREEK ROAD	2980	34000	32000
2336	3	49	PLA	R8.973	LORENSEN RD	2650	32000	30000
2340	3	49	PLA	11.373	PLACER/NEVADA COUNTY LINE	0	0	0
Percent increase 10-year growth, north of Bell Road							*23%*	*22%*
Yearly growth rate, north of Bell Road							*2%*	*2%*

The Caltrans traffic counts for SR 49 in Placer County just north of Bell Road shown in the above table indicate that the annual growth rate is approximately 2% per year. For a 20 year period this calculates to a growth factor of 1.49 overall. This matches the growth used in the SEIR traffic study as shown below in Figure 5B for intersection counts at the critical intersection of SR 49 at Lone Star Road, where the future cumulative volumes are consistently 1.49 times the existing volumes (see Table 5B below). The growth rate of traffic on SR 49 is a reliable indicator of regional growth rates in the area, and multiplying the existing traffic counts by 1.49 to represent the future is consistent with Caltrans' database of traffic count growth for the same facility.

FIGURE 5B. CUMULATIVE TRAFFIC GROWTH CHECK.

Existing Levels:	Cumulative Levels:	Existing Levels:	Cumulative Levels:
			N/A
SR 49/ Lone Star Rd	SR 49/ Lone Star Rd	Bell Rd/ Joeger Rd	

Source: Figure 10 and 11 from SEIR Traffic Study for Hidden Falls, and from Placer County Winery TIS

From the Caltrans data in Figure 5B above, obtained from the Caltrans Data Portal[3] a 10-year growth rate for traffic counts can be determined using traffic counts from the Year 2007 and 2017.

FINDING #7: CUMULATIVE IMPACTS FROM PROJECT NOT MITIGATED

From the SEIR traffic study summary of cumulative impacts, the resulting language was the same for the SR 49 intersections at Lone Star Road and Cramer Road: The Hidden Falls Regional Park expansion project would create a ***significant and unavoidable impact***. This conclusion that it was "unavoidable" was based on the fact that there are no current funding sources to install a roundabout or a traffic signal to mitigate the LOS F and LOS E unsatisfactory conditions, and that the project bears no direct responsibility for mitigation. If no funding source is available, and a signal is not installed, because of the very real potential safety hazard at this intersection (since delays are already at the 6 minute level for side street Lone Star approaches, and serious injury broadside accidents are happening nearly every year at this intersection), the approval of the project should be denied until such safety problems are mitigated sufficiently, rather than exacerbate an already unsafe condition.

The extreme delays for the existing condition are unacceptable and unsafe. Accidents are happening. The cumulative traffic volumes are being projected to be 1.49 times higher in 20 years (factored for growth), and will make the side street delay for Lone Star Road extremely excessive, causing drivers to take more chances and perhaps make very unsafe entries into SR 49 traffic, crossing multiple lanes of traffic in the process. It is estimated that traffic accidents will most likely double in frequency in the future if no mitigation is installed.

Tables 13 and 19 in the SEIR traffic study are included here in Figure 5C, so that an easy comparison of existing plus project and cumulative plus project conditions for the two critical intersections on SR 49 can be made. It can be seen that the change in LOS and delay from existing to cumulative is significant, going from 110.3 delay seconds overall, to nearly double that at 197.2. The eastbound approach delay tripled in the future from 120 to greater than 300 seconds delay. This unacceptable condition was not mitigated due to lack of funding.

[3] https://data.ca.gov/dataset/annual-average-daily-traffic-volumes

Building the Hidden Falls Park expansion should be conditioned upon installing two traffic signals to mitigate the LOS F traffic impacts of the Lone Star Road and Cramer Road intersections. In the case of a wildfire, local residents would NOT be able to exit Lone Star Road or Cramer Road with any efficiency if a signal is not installed that could provide some priority access in the case of a fire, or at least eliminate the 6 plus minute delays projected for these locations.

FIGURE 5C. EXISTING PROJECT IMPACTS COMPARED TO CUMULATIVE IMPACTS.

TABLE 13
EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE

#	Location	Control	Weekday PM Peak Hour				Saturday Peak Hour			
			Existing		EX Plus Project		Existing		EX Plus Project	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	SR 49 / Lone Star Road									
	(overall)	EB/WB Stop	(106.3)	(F)	(110.3)	(F)	(93.4)	(F)	(101.2)	(F)
	Eastbound approach		103.5	F	120.2	F	26.0	D	31.2	D
	Westbound approach		>300	F	>300	F	195.6	F	298.8	F
	Northbound left turn		11.9	B	12.0	B	12.9	B	13.3	B
	Southbound left turn		16.5	C	16.6	C	10.2	B	10.3	B
2	SR 49 / Cramer Road									
	(overall)	EB Stop	(15.6)	(C)	(16.9)	(C)	(13.0)	(B)	(15.5)	(C)
	Eastbound approach		18.8	C	20.05	C	14.6	B	17.9	C
	Northbound left turn		11.3	B	11.5	B	11.8	B	12.3	B

TABLE 19
CUMULATIVE PLUS PROJECT INTERSECTION LEVELS OF SERVICE

#	Location	Control	Weekday PM Peak Hour				Saturday Peak Hour			
			Cum Base		Cum Plus Project		Cumulative		Cum Plus Project	
			Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS	Average Delay (sec/veh)	LOS
1	SR 49 / Lone Star Road									
	(overall)	EB/WB Stop	(192.0)	(F)	(197.2)	(F)	(174.8)	(F)	(229.3)	(F)
	Eastbound approach		>300	F	>300	F	>300	F	>300	F
	Westbound approach		>300	F	>300	F	>300	F	>300	F
	Northbound left turn		18.9	C	19.3	C	22.1	C	24.2	C
	Southbound left turn		33.6	D	33.8	D	13.1	B	13.2	B
2	SR 49 / Cramer Road									
	(overall)	EB Stop	(30.9)	(D)	(36.6)	(E)	(21.5)	(C)	(30.3)	(C)
	Eastbound approach		42.0	E	50.0	E	23.0	C	37.3	E
	Northbound left turn		17.3	C	17.7	C	20.9	C	22.9	C

Source: SEIR, Hidden Falls Regional Park TIS

FINDING # 8: HIDDEN FALLS PARK TRIP GENERATION RATE IS NON-STANDARD

This task reviewed the potential amount of traffic that is expected from the Hidden Falls Regional Park expansion project. The traffic study used trip generation rates developed specifically for the project, with no references to any national sources or averages. These trip rates were based on a daily total of traffic factored down to a peak hour number, and the inbound and outbound split were derived from a sampling in the field. This method was based on what is happening, in what appears to be only one survey, at the Mears entrance to the Hidden Falls Regional Park.

A lot of assumptions were made to develop this trip generation rate, and it appears that it was done based on how many permits were issued, a daily hose count, and a turn percentage at the intersection of Mears Drive and Mount Vernon Road. This may or may not be accurate since there is also residential traffic that uses this intersection that has nothing to do with the park, but may be mostly related to the traffic patterns of the numerous homes that also share Mears Drive, probably with a higher outbound percentage of traffic flow. It appears that the trip generation rate, made from a single sourced set of assumptions, needs to be further clarified and enhanced with more data, to bring it to industry standards since there are similar uses in the United States.

The Institute of Transportation Engineers (ITE) publishes trip generation rates based on national averages for similar uses within many categories of land uses. Their guidelines to develop a new or custom trip generation rate, which was done in the SEIR traffic study for Hidden Falls, is to take many different samples at different locations, and use averages. Building a trip generation rate based on assumptions is not the industry standard.

to determine how much of the project's traffic is assumed to be operating during the peak hours. The problem with that approach is that the project's traffic is not expected to be even significant during the typical peak hours of the surround street system, so the analysis is not entirely helpful to properly determine the worst case impacts, and what hundreds of additional vehicles means to a road system that cannot currently adequately handle outgoing evacuation traffic without delays in excess of one hour. During a fire situation, this is critical and potentially catastrophic to life if the fire happens to jump the road with cars stuck in a stop and go traffic jam. Figure 6A shows the trip generation for the project as shown in the SEIR.

FIGURE 6A. TRIP GENERATION ASSUMPTIONS FOR PROJECT

TABLE 9
HFRP EXPANSION SATURDAY TRIP GENERATION ESTIMATE

Location	Parking Spaces				Permits Available[1]	Trips per Permit				Trips			
							Saturday Peak				Saturday		
	Regular	Equestrian	ADA	Total		Daily	In	Out	Total	Daily	In	Out	Total
Proposed Project													
Twilight Ride	96	40	4	140	252					599	21	42	63
Harvego Cartolu Ranch Rd	119	10	5	134	222					573	20	40	60
Mears	25	0	0	25	42	2.58[2]	33%	67%	0.27[3]	108	4	7	11
Private	57	0	3	60	100					258	9	18	27
Total	297	50	12	359	596					1,538	54	107	161
Trips caused by turn-away's without permit[4]										167	9	9	18
Project Total										1,705	63	116	179
Prior Approval not yet Constructed													
Garden Bar (Prior approval)	45	20	5	70	116	2.58	33%	67%	0.27	299	11	21	32
Trips caused by turn-away's without permit[4]										32	2	2	4
Previously approved total										331	13	23	36
Total of Proposed Project Plus Prior Approval not yet Constructed													
Total	342	70	17	429	712					1,837	65	128	193
Trips caused by turn-away's without permits[4]										199	11	11	22
Grand Total with turn-away's										2,036	76	139	215

[1] based on 187 Saturday permits offered at Mears for 113 parking space capacity = 1.66 permits per space.
[2] based on 348 daily trips at Mears on divided by 135 permits issued on June 16, 2018 = 2.58 trips per permit. The observed daily volume includes the effects of automobile – trailer combinations with multiple axels that would overstate actual vehicle trips, as well as the effect of staff travel, but no adjustment has been made in order to produce a conservative estimate.
[3] based on observed peak hour percentage of daily and directional split observed at Mears entrance.
[4] assume 1/3 the current turn-away rate observed at Mears due to increased knowledge of reservation system and improved cellular phone coverage. The current rate was 58 turn-away's out of 135 permits issued or 43%. One Third is 14%. Assume two daily trips per turn-away.

Figure 6A shows that the Saturday "peak" traffic (assumed to be 10am to 11am based on data in the SEIR appendix which states the Saturday peak hour is 10am-11am) is only expected to be a small fraction of the total parking lot capacity. For example, at the proposed Twilight Ride parking lot with 140 spaces, the peak hour assumption is that only 21 vehicles will arrive out of a possible of 140 spaces available. This is only 15%. Also, Table 9 shows that on a Saturday, the peak is assumed to be 21 cars in and 42 cars outbound. Since this is at 10 am, it does not make sense that most will be leaving when the day is beginning. This needs to be explained or corrected, because it is non-intuitive and does not make sense with other "park" uses in the ITE Trip Generation Manual which show more trips coming inbound in the morning peak hour, and more trips going outbound in the evening peak hour at City Parks, County Parks, and State Parks. They all have this pattern, but in the SEIR traffic study for Hidden Falls the direction of traffic during the morning peak hour is backwards based on numerous other trip generation rates for various kinds of parks.

FINDING #9: LOCAL STREETS UNDERPREPARED FOR EMERGENCY EVACUATION

PLACER COUNTY IDENTIFIES WILDFIRE AS THE HIGHEST RISK/HAZARD IN THE AREA[4]

Specific Roadway Capacity in an Emergency Evacuation. When many drivers converge onto a street at the same time, such as would take place when emergency evacuation phone call instructions are sent to all residents in an area during a wildfire emergency, the roadway conditions are no longer typical. Since wildfires are ranked as the highest priority of SIGNIFICANCE by Placer County, and since the possibility is also ranked as LIKELY, with the potential ranked as CATASTROPHIC, this roadway condition should be of the highest priority. Much more important than making sure an intersection operates at LOS A conditions during the typical peak hour. Since all intersections on the local roads are currently operating at LOS A conditions, this is not the best metric to be using to determine the need for safety in travel, especially in an emergency where evacuation is required and mandated. The roadways and intersections much be designed to be compatible with a proper Traffic Control designed to move the maximum volume of traffic, and with the minimum of delays caused by stop and go conditions.

When vehicles are forced to wait up to 15 seconds each at a stop sign controlled intersection, this severely limits the throughput of vehicles to about 240 vehicles per hour. This is even less when trucks with horse trailers are factored in, since deceleration and acceleration are less efficient. Bell Road from Auburn Valley Road to Joeger Road is approximately 4.1 miles. The speed limit is 35 mph from Lone Star Road to Hubbard Road, and then increases to 40 mph from Hubbard Road to Joeger Road. If a vehicle travels at 35-40 mph this trip would normally take about 7 minutes. This is assuming there are very few vehicles on the road and speeds are uninhibited. However, during an emergency evacuation the volume of traffic that hits the road increases dramatically, especially to Bell Road as the main alternative to SR 49. This total can be well over 400 vehicles (assuming only ONE vehicle per residence leaves) and even much higher with the expansion of the Hidden Falls park and installing a large parking lot at the Twilight location (100 more cars, and 40 more trucks with horse trailers for 140 more vehicles in the mix, say, 550 vehicles at a minimum).

How Long is this Line of Traffic? A long line of traffic consisting of 550 vehicles approaching Bell Road, with each regular vehicle occupying 30 to 40 feet of roadway space in stop and go conditions, and trucks with horse trailers taking up 60 to 70 feet each... it can be assumed that an average of 50 feet of roadway space per vehicle is used, and that such a line of traffic trying to get out would exceed 27,500 feet in length, or about 5.2 miles. Without the Twilight Ride parking lot vehicles (140), this would lower to about 400 vehicles, or 3.8 miles, which represents the existing condition and road length of Bell Road from Auburn Valley Road to Joeger Road. This length of traffic actually matches the observed descriptions from residents who live in Auburn Valley HOA and who said they traveled in stop and go conditions from Lone Star Road to Joeger Road and that

[4] https://www.placer.ca.gov/DocumentCenter/View/368/Annex-A-City-ofAuburn-PDF

it took 1.5 hours to make the 4 mile trip. This is an unacceptable and dangerous condition that the County has not planned for, and if additional vehicles are added due to Hidden Falls Park expansions, and more especially adding the Twilight Parking Lot, the situation becomes significantly worse compromising safety for evacuations. Local residents are also having insurance companies cancel their insurance policies because of the high risk and the insurance company's lack of motivation to write the policies. The insurance companies are also aware of the previous evacuation situation that happened in 2009, and the County has not made any plan or mitigation of this situation.

In the 2009 wildfire, traffic on SR 49 was closed south of Lone Star Road and north of Bell Road, a 4 mile section. This closure caused traffic from homes to the west of SR 49 to have to use Bell Road to escape the fire. There are 140 residences in Auburn Valley HOA alone, and with Lone Star Road traffic feeding into Bell Road at the intersection with Auburn Valley Road, this has the potential to add 200 more vehicles even before Bell Road reaches Cramer Road, for a total of 340 vehicles at that point. When Cramer Road traffic is added in, the volume increases approximately 200 more totaling more than 500 vehicles trying to enter the Joeger Road intersection going south form Bell Road. Joeger Road was also closed to SR 49, so all residences in the area feeding into Joeger Road were forced to go to Bell Road to continue south towards I-80 for evacuation. The Joeger Road corridor has several hundred more homes and parcels that feed into it as seen in Figure 6A. This parcel map information was obtained from Placer County's online parcel map system[5].

PRISM Engineering built a computerized microsimulation traffic model (using SimTraffic) to simulate the all-way stop control at the Bell Road and Joeger Road intersection for the scenario of wildfire evacuation. According to the Traffic Engineering science, only 240 cars and trucks per hour on southbound Bell road can actually pass through the intersection with Joeger Road. The same is true for all other Joeger Road approaches as well, because of the stop and go delays. These are shown in the microsimulation animated model of traffic flows in a video created by PRISM Engineering (see Figure 6B for sample output from this model). A video showing the results of this model can be watched at:

http://www.prism.engineering/placercountykors.html

and scroll down to *"SIMTRAFFIC MODEL: Bell Road at Joeger Road During Wildfire Evacuation."*

This model had results that validate the anecdotal statements from local residents who actually experienced the 3 mph stop and go conditions on Bell Road from Auburn Valley Road down to Joeger Road during the wildfire evacuation. After the Joeger Road intersection chokepoint where three approaches converged to southbound Bell Road, the vehicle stop and go situation diminished, and the roadway speeds normalized to the regular speed limit as Bell Road approached SR 49, because the capacity of Bell Road is much higher south of Joeger Road near SR 49.

FIGURE 6A. PLACER COUNTY PARCEL MAP, BETWEEN LONE STAR RD & JOEGER RD

[5] http://maps.placer.ca.gov/Html5viewer/Index.html?configBase=http://arcgis/Geocortex/Essentials/REST/sites/LIS_Public/viewers/LIS_Base-Public/virtualdirectory/Resources/Config/Default

Upper Half of Parcel Map showing Auburn Valley Rd

SOLUTIONS?

In order to address this stop and go critical situation for evacuation conditions on Bell Road between Auburn Valley / Lone Star Road on the north and Joeger Road on the south, the intersection needs to be redesigned.

Roundabout? A roundabout is a bad idea, because it would favor Joeger Road WB traffic only, and cause Bell Road SB and Joeger Road EB to be delayed indefinitely.

Traffic Signal? The volume of traffic at this intersection does not meet the standard warrants of minimum volumes to install a signal. The cost of a traffic signal is also very high. It would only offer better throughput, but would not add any additional lane capacity, which is needed the most.

FIGURE 6B. SIMTRAFFIC MICROSIMULATION MODEL, WILDFIRE EVACUATION AT BELL RD & JOEGER RD. 4 CARS / MIN THROUGHPUT, ONLY 240 VEHICLES PER HOUR, BUT DEMAND IS 400+

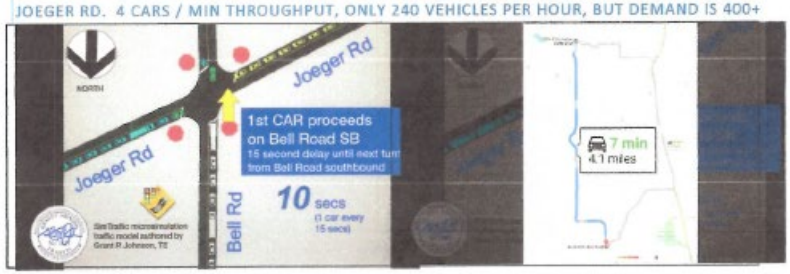
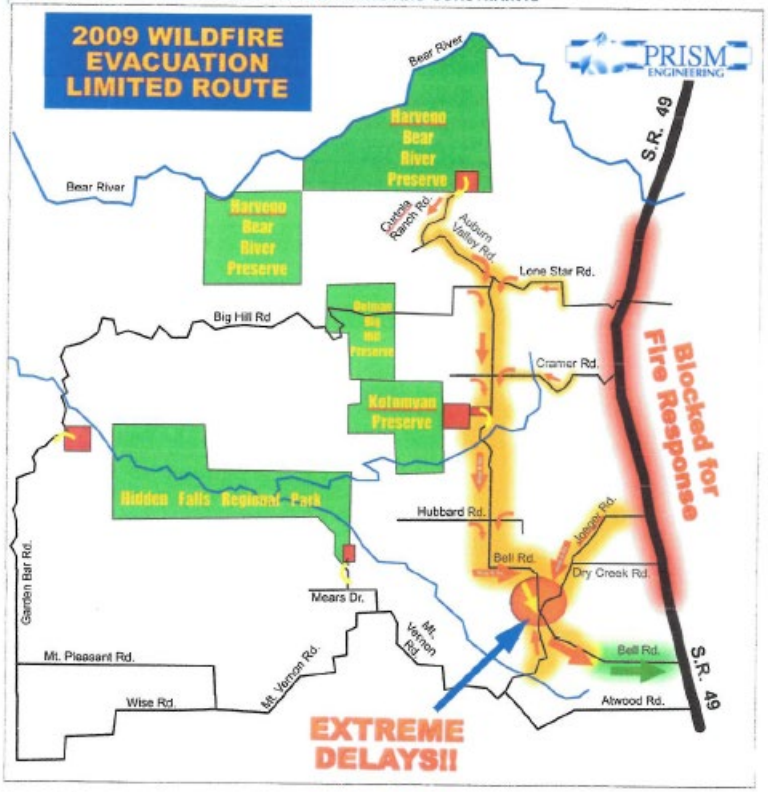


FIGURE 6C. EMERGENCY TRAFFIC CONTROL CONCEPTS

The microsimulation results using SimTraffic software indicate that only 240 cars per hour can get through the Joeger Road intersection during a wildfire evacuation scenario. This was also verified independently from anecdotal observations of 3 mph stop and go conditions back in 2008 during the wildfire that closed SR 49 during the fire. If only 240 cars per hour can get out, then mitigations and alternative solutions are needed to prevent this delay. The last thing to do to this road is add two new parking lots for the park expansion that would hold nearly 300 vehicles, to add to the 400 demand that is already there. This would make the total volume 700 vehicles trying to get out in case of fire, and this would be nearly a doubling of traffic volume that was already a serious danger and problem. Figure 6D has been prepared to show what the specific evacuation constraints are for Bell Road at Joeger Road during a wildfire evacuation and where SR 49 is closed.

FIGURE 6D. 2009 WILDFIRE EVACUATION FLOWS AND CONSTRAINTS



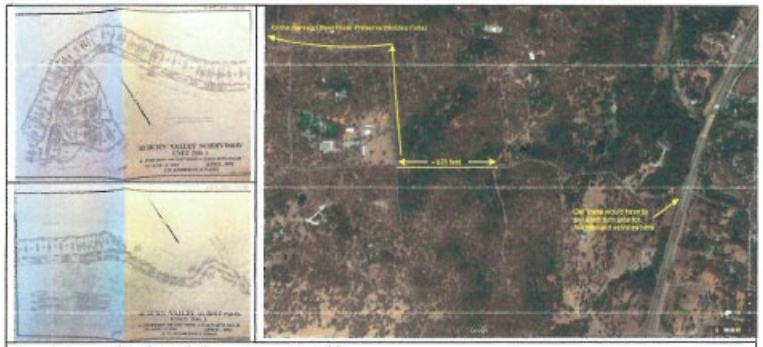
Prepared by PRISM Engineering

FINDING #10: THERE IS A VIABLE ALTERNATIVE ACCESS TO THE HIDDEN FALLS REGIONAL PARK EXPANSION, TO AVOID IMPACTING BELL ROAD EVACUATION

The County did not seek for project-related solutions to the safety and emergency evacuation problem that now exists in the County, a condition that has been identified by the County as the most significant and potentially catastrophic emergency situation in the County. Solutions to lessening these fire evacuation impacts are imperative, and since viable alternatives to the proposed parking locations are possible, these should be planned and further explored. A parking lot that creates dangerous impacts to wildfire evacuation procedures should be eliminated if possible.

It is possible to adjust the plan for the Hidden Falls Regional Park expansion to avoid impacting Bell Road unnecessarily. It is possible to have an alternative access road from SR 49 north of Lone Star Road at Overhill Drive. Figure 6E shows a potential alignment for this route connecting SR 49 to the Harvego Bear River Preserve lands, where additional parking can be installed, and this takes much of the impact way from Bell Road, which is already over-capacity for emergency evacuation, serving literally several hundreds of homes.

FIGURE 6E. ALTERNATIVE ACCESS TO HIDDEN FALLS REGIONAL PARK EXPANSION



Parcel Maps and Dedicated Alignments are Possible

There is already an offer of dedication for these parcels to make the new access road possible.

The development of a more direct access road, as well as higher levels of parking to the north in the Harvego Bear River Preserve lands, would help to minimize the impacts to the local road system on Bell Road and Mt. Vernon Road, as well as Dog Bar Road. It would take the impact of the project directly to SR 49, and a signal would most likely be warranted, mitigating the traffic impact with a single location for future parking spaces.

The concept plans to expand parking at the locations as shown in the SEIR would be a significant and severe impact to traffic and local resident safety under an emergency wildfire evacuation order, especially to Bell Road. The capacity of the local roads is already severely and dangerously limited for these scenarios, and has failed previously. The problem is already known and identified as potentially catastrophic in the Placer County risk management plans. Significantly increasing the number of vehicles to the local roads, in light of an evacuation scenario is not acceptable. There are other issues as well having to do with horizontal and vertical sight distance constraints, as well as narrow roads that restrict two-way traffic. The sub-standard road widths in the area are numerous.

FINDING #11: CURTOLA RANCH ROAD PARKING SPACES WILL SIGNIFICANTLY ADD TO THE WILDFIRE EVACUATION PROBLEM, AND IS A CEQA SAFETY IMPACT TO THE ENVIRONMENT.

One of the proposed parking lots for the Hidden Falls expansion is located at the end of Curtola Ranch Road and across an earthen dam (not engineered for traffic, especially heavy traffic). The earthen dam has only one lane and is shown in the figure to the left. The dam is on the left edge of the large pond, connecting with Curtola Ranch Road on the south side of the pond. If the engineering challenges were the only problem, this wouldn't be so bad, but the very location of this proposed parking lot places any emergency evacuation pathway directly merging with Bell Road.

The proposed parking lot at this location on the north side of the earthen dam is for 119 regular spaces, 5 ADA, and 10 equestrian spaces.

The location of this parking lot should be eliminated as an alternative, as if will create a dangerous impact to wildfire evacuation, which requires exiting to Bell Road only, which was severely over-capacity in the last wildfire, with over 1.5 hour delays. By adding the proposed Twilight Ride and Curtola Ranch parking lot vehicles into the mix of an already failing condition, the impacts are potentially catastrophic to life itself, as the 1.5 hour unacceptable previous

evacuation delays would most likely increase to 3 hours, and many motorists would not make it out in time with a fast spreading fire.

FINDING #12: TWILIGHT RIDE PROPOSED LEFT TURN POCKET IS DEFICIENT.

The SEIR traffic study recommends that a left turn lane will be required at the Twilight Ride site. The study further states that 75% of the Twilight Ride parking supply could be created before a left turn lane was needed. This may or may not be true, but based on Finding #8 on Trip Generation Issues, it is likely that the turn pocket would be needed much sooner since the assumptions for "need" were based on an assumed level of traffic going in and out of the parking lot area (which in our view are likely way underestimated, See Finding #8 for more detail).

The SEIR study further states that "the Highway Design Manual states that the entry bay taper should be long enough to accommodate storage for a two-minute accumulation of turning cars, or a minimum of two vehicles. A full 40 mph design would have a bay taper and lane that totaled 365 feet. In addition to the lane itself, a transition area is needed at each end to create the lane. Depending on whether the lane is created by widening on one or both sides of centerline, these transitions are 320 or 160 feet long for 40 mph design."

Conclusion: a 365 left turn pocket plus a 320 foot long road-widening taper would be needed most likely on the east side for northbound traffic, for a total distance of about 700 feet back of the Twilight Ride parking lot entrance. Our field survey of the location, as well as our video recorded drive through shows that there are significant horizontal and vertical sight distance constraints for northbound Bell Road traffic starting at 700 feet south of the proposed parking lot driveway. It is our view that based on the trip generation probability that the left turn pocket would be needed on opening day. The horizontal and vertical sight distance constraints for northbound Bell Road traffic related to the proposed left turn pocket are as follows:
The roadway at this point is at the end of a horizontal curve to the right, then 350 feet later, the roadway meets a crest and the road ahead cannot be seen from before this point, so there is only 350 feet of stopping sight distance (for cars coming out of parking lot). The crest on Bell Road at that midpoint of the left turn pocket and taper is also on a horizontal curve to the left, so that a driver can not completely see ahead because of trees and bush obstructions to sight on the left or west side of the road before the driveway location. These obstructions do not disappear until a vehicle is only 250 away from the driveway. Previous Finding #2 stated that *A truck with trailer going 40 mph* on a flat road needs 500 feet. This would mean that there is not sufficient stopping sight distance available at this location, and it is a poor location to install a parking lot given the vertical and horizontal sight distance constraints (not within AASHTO Green Book standards or Caltrans Highway Design Manual standards for stopping sight distance), or even within roadway grade constraints which were not even added in here. If grade is also considered for the minimum 6% grade that exists in the southbound direction of Bell Road approaching this proposed driveway, once again stopping sight distance becomes an issue for trucks with trailers.

ABOUT THE AUTHOR

Grant P. Johnson is a private consulting civil engineer, specializing in traffic engineering, who prepares technical traffic engineering reports as well as practices as an Expert Witness for Traffic Engineering. He received a Bachelor of Science degree in Civil Engineering from California State University, Sacramento in May 1984. Since December 1987, he has been a Registered Traffic Engineer in California. Since 2000, he has been the sole proprietor of PRISM Engineering. His experience specifically relates to the following areas: traffic engineering; traffic safety; traffic operations; transportation planning; signal design and operations; intersection layout and design; signing and striping plans; microsimulation traffic modeling; and, authoring transportation studies. Each of these disciplines are specifically qualified by the traffic engineering licensure.

He is very familiar with traffic and transportation engineering principles and methods, specifically including, the FHWA Manual on Uniform Traffic Control Devices ("MUTCD"), the American Association of State Highway and Transportation Officials ("AASHTO") Green Book, Complete Streets, Caltrans Design Manual, and other FHWA documents. In addition, he is very familiar with various professional software programs being used in the traffic engineering and transportation planning profession, including, Synchro, SimTraffic, AutoCAD, TransCAD, and Highway Capacity Manual ("HCM"), many of which were used in this traffic study review.

He is also very familiar with official Traffic Collision Reports, and the Statewide Integrated Traffic Records System ("SWITRS") accident reports.

http://www.prism.engineering/experience.html

APPENDIX

Key output calculation sheets and data summaries from SEIR Traffic Study.

HCM 6th TWSC — EXISTING SATURDAY
1: SR 49 & LONE STAR RD — 03/18/2019

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↑	↱	↰	↑↑	↱	↰	↑↑	↱
Traffic Vol, veh/h	3	1	40	39	1	12	24	899	20	5	1296	10
Future Vol, veh/h	3	1	40	39	1	12	24	899	20	5	1296	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	60	-	-	60	300	-	200	380	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	6	2	2	6	2
Mvmt Flow	3	1	43	42	1	13	26	967	22	5	1394	11

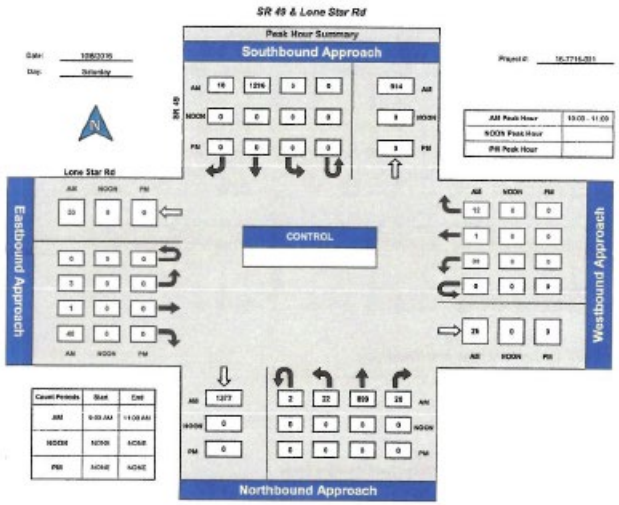
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1940	2445	697	1727	2434	484	1405	0	0	989	0	0
Stage 1	1404	1404	-	1019	1019	-	-	-	-	-	-	-
Stage 2	536	1041	-	708	1416	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	39	31	383	57	31	539	482	-	-	695	-	-
Stage 1	147	204	-	254	313	-	-	-	-	-	-	-
Stage 2	496	305	-	392	202	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	35	29	383	47	29	529	482	-	-	695	-	-
Mov Cap-2 Maneuver	35	29	-	47	29	-	-	-	-	-	-	-
Stage 1	139	203	-	240	296	-	-	-	-	-	-	-
Stage 2	456	289	-	344	201	-	-	-	-	-	-	-

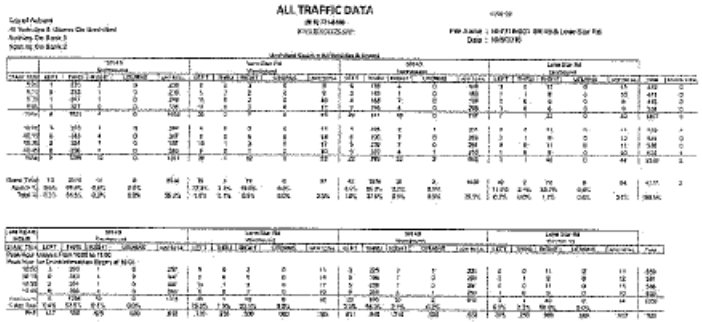
Approach	EB	WB	NB	SB
HCM Control Delay, s	26	195.8	0.3	0
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	482	-	-	33	383	46	529	695	-	-
HCM Lane V/C Ratio	0.054	-	-	0.13	0.112	0.935	0.024	0.008	-	-
HCM Control Delay (s)	12.9	-	-	129.8	15.6	250.7	12	10.2	-	-
HCM Lane LOS	B	-	-	F	C	F	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0.4	3.8	0.1	0	-	-

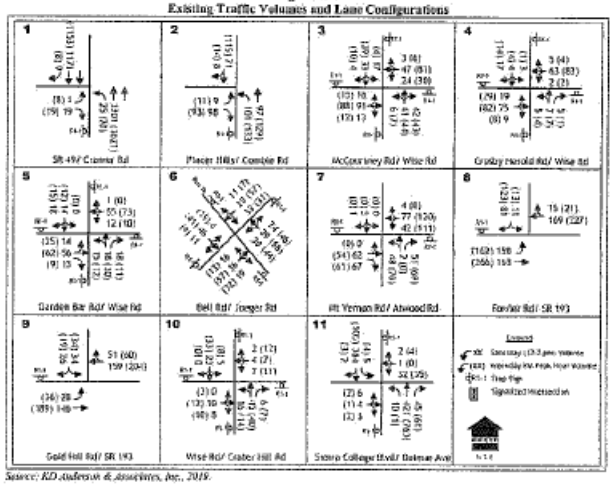
HFRP
KD ANDERSON & ASSO

Synchro 8 Report
Page 1



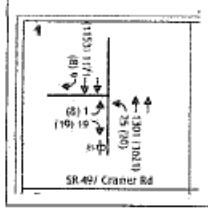
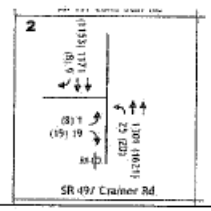


Traffic Counts from Winery TIS for Saturday and Weekday:



Source: KD Anderson & Associates, Inc., 2019.

TRAFFIC ENGINEERING REVIEW AND FINDINGS RE: HIDDEN FALLS SEIR TRAFFIC STUDY

WINERY Traffic Study	Hidden Falls SEIR
	

Note how these volumes are exactly the same for Cramer Rd/ SR 49. However, weekday numbers in the Winery TIS said it was for Thursday, and the HF SEIR said it was for a Friday.

Caltrans Response:

We understand the concerns with wildfire evacuation needs. We continue to work with our Placer and Nevada County partners, local fire districts, and Cal Fire to find ways to better address the concerns addressed in your letter. Caltrans has a specific policy in Design Information Bulletin 93 – Evacuation Route Design Guidance, published December 23, 2020, which has been taken into consideration with this project. As explained in the forums, this is a Federally supported Highway Safety Improvement Program project to address an existing collision pattern of cross median collisions and the funding is limited to that work necessary to attempt to correct the existing collision pattern. , In developing this environmental document, the Department analyzed all aspects of the project limits and will continue to work with all our local and State partners to find ways to address these concerns as our project is developed.

2. Steve Hackett

From: Steve Hackett
To: Borrayo, Raquel@DOT
Subject: Re: REMINDER: Second Public Meeting Scheduled for State Route 49 Safety Project
Date: Friday, June 4, 2021 6:42:00 AM

EXTERNAL EMAIL. Links/attachments may not be safe.

where can we see the traffic count numbers?

Caltrans Response:

Public Information's Officer provided the Traffic Analysis Report (TAR) to Mr. Hackett.

From: Steve Hackett
To: Borrayo, Raquel@DOT
Subject: Re: REMINDER: Caltrans Seeks Community Feedback on SR-49 Safety Barrier Project
Date: Wednesday, May 26, 2021 2:24:24 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

You really need to publish traffic survey information for this area.
1. How many vehicles per hour broken down by hour with emphasis on peak commute times
2. What is count of vehicles that would typically utilize the round abouts as u turns vs through traffic.
3. What is count of vehicles entering this area from adjacent properties.
4. What is through put capacity of round abouts being considered
5. What will impact be to vehicles entering hwy49 at the round abouts

If you don't have complete and satisfactory answers to these questions, you have no business holding another forum....they weren't answered at the last forum....and we didn't even talk about size or space required to do this project...

Steve Hackett
Boquetep2016@gmail.com

Caltrans Response:

1.) Please see the requested Traffic Analysis Report that was provided to you. Appendix A (Traffic Counts) provides the breakdown of the traffic count which was conducted on October 8th, 2019.

2.) Per the Traffic Analysis Report. Page 31 (Figure 9) provides the traffic volume that will be making the U-turn movement at Lone Star Road and Lorenson Road/Florence Lane for the opening year (2024). Page 35 (Figure 10) provides the same information but for the horizon year (2044).

3.) The traffic counts provide approach volumes for the side streets (Lone Star Road, Cramer Road, Lorenson Road/Florence Lane). Traffic counts were not conducted for adjacent properties, but a daily trip generation can be provided using Institute of Transportation

Engineers (ITE) Trip Rates. Considering the number of parcels fronting SR49, the number of mailboxes along the corridor, ITE trip rates show approximately 70 daily trips could be generated between Lone Star Road and Lorenson Road/Florence Lane.

4.) Double-lane roundabouts can accommodate 40,000 to 45,000 vehicles per day (Exhibit 3-12, Roundabouts: An Informational Guide, Second Edition). From the detailed analysis reports in Appendix N, the Highway 49 approach capacity varies from 2,500 to 2,800 vehicles per hour depending on the conflicting traffic volume.

5.) Per the Traffic Analysis Report. Page 40 (5.2 Intersection Operations) provides the intersection analysis for the opening year (2024). Page 46 (6.2 Intersection Operations) provides the intersection analysis for the horizon year (2044). Overall, the delay for the side streets will be lower than the No Build Alternative particularly for left turning vehicles.

3. Robert Starbuck

From: Robert Starbuck
To: Borrayo, Raquel@DOT; Jennifer Starbuck
Subject: Re: REMINDER: Caltrans Seeks Community Feedback on SR-49 Safety Barrier Project
Date: Wednesday, May 26, 2021 3:40:34 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

We support the Safety Barrier Project with Roundabouts or Signal Lights at Lorenson/Florence and Lone Star.

Thank you,

Robert and Jennifer Starbuck
9009 Upper Valley Rd, Auburn, CA 95602
(760/486-7405)

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

4. Scott Allen

From: Scott Allen <Scott2.a@midax.com>
Sent: Wednesday, May 26, 2021 1:50 PM
To: Benipal, Amarjeet S@DOT <amarjeet.benipal@dot.ca.gov>
Subject: Re: REMINDER: Caltrans Seeks Community Feedback on SR-49 Safety Barrier Project - Feedback

---

from Fix49.org

EXTERNAL EMAIL. Links/attachments may not be safe.
Hi Raquel,

My daughter Jolie Allen collected over 3,000 petitions from Nevada County Residents asking Caltrans to widen Hwy 49 to 4 lanes and install a center median (K rail) between McKnight Way in Grass Valley and Dry Creek Road in Auburn. The 3,000+ petitions were given to Caltrans Engineer Jonathan Pray. The community is very concerned about the fatal head-on collisions that a median would eliminate. Her still active website www.fix49.org received over 25,000 views. How much more feedback do you need? Caltrans also proposed round abouts every mile or two so driveways would make right turns only, and use the round abouts to head the other direction. The Camp Fire (Paradise) taught us we need 4 lanes on a hwy with and emergency shoulder for evacuations. Alta Sierra has 7,000 Residents that will flee onto a 1 lane Hwy 49. There is currently construction, hopefully it includes the center median. Why didn't La Barr Meadows Road widening include a median?

Please bring this up at tonight's meeting.

Sincerely,

Scott Allen
ph(925)586-2968

Caltrans Response:

This is a Federally supported Highway Safety Improvement Program (HSIP) project and the project is limited to the segment that met State HSIP standards for reduction of fatal and severe injury collisions under the Multi-Lane Cross Median Monitoring Program, as identified by Caltrans. Caltrans continuously monitors collision patterns throughout the Highway 49 corridor to identify locations or segments for potential correction under HSIP and we work with our local agency partners and the public to identify projects, identify potential funding sources, obtain

funding and develop projects to improve the Highway 49 corridor. We also understand the concern about fire evacuation and we now have a specific policy in Design Information Bulletin 93 – Evacuation Route Design Guidance, published December 23, 2020, which has been taken into consideration for all potential projects in the corridor. We will continue to work with all our local and State partners to find ways to address these concerns as our projects are developed. La Barr Meadows was not a HSIP project and at the time was not a multi-lane facility and would not have been considered for a concrete median barrier. There is, however, a project currently in development to widen the segment from McKnight to LaBarr Meadows to a 4-lane facility complete with a concrete median barrier. That project is currently scheduled to go to construction in 2026.

5. Edward Cuffe

From: Edward Cuffe
To: Borrayo, Raquel@DOT
Subject: Re: REMINDER: Caltrans Seeks Community Feedback on SR-49 Safety Barrier Project
Date: Wednesday, May 26, 2021 4:23:00 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

Just do it

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

6. Greg Bala

From: Greg Bala
To: Borrayo, Raquel@DOT
Subject: Re: SR-49 Safety Barrier Project
Date: Saturday, May 29, 2021 1:11:29 PM
Attachments: image001.png
image002.png

EXTERNAL EMAIL. Links/attachments may not be safe.

Hi Raquel,

Here's more on the issue of roundabouts between highly imbalanced traffic volumes such as at Florence and 49...

"The UK is quietly replacing roundabouts with traffic lights. The US is doing the exact opposite. Both cite safety and traffic flow. So who is right?"
https://www.google.com/amp/s/amp.theguardian.com/cities/2015/oct/19/traffic-lights-roundabouts-way-out

"...Roundabouts, he says, cause tailbacks unless the traffic on each approach road is equal. It's why the axe is swinging over what's known as Blue House Roundabout. "At morning rush hour, people driving west to east get a free run through [Blue House] roundabout, but those giving way while trying to travel from the north into the city centre face huge tailbacks," he says. 'A roundabout doesn't give us sufficient control of the network to control priority and demand.'"

-Greg

On Friday, May 28, 2021, Borrayo, Raquel@DOT <Raquel.Borrayo@dot.ca.gov> wrote:

> Thanks Greg, I will include your comments below as well.
>
> Raquel
>
> ---
>
> **From:** Greg Bala <gpbala@gmail.com>
> **Sent:** Friday, May 28, 2021 1:01 PM
> **To:** Borrayo, Raquel@DOT <Raquel.Borrayo@dot.ca.gov>
> **Subject:** Re: SR-49 Safety Barrier Project
>
> EXTERNAL EMAIL. Links/attachments may not be safe.
>
> Thanks Raquel. The rationale is that we envision lots of backup from roundabouts and also a near-impossibility to enter a highly-loaded roundabout from Florence -- which is how we access 49 if we're headed north.

On Fri, May 28, 2021 at 12:55 PM Borrayo, Raquel@DOT <Raquel.Borrayo@dot.ca.gov> wrote:

> Thanks Greg,
>
> I will share your preference with the project team as part of the official record.
>
> Best,
>
> Raquel

From: Greg Bala <gpbala@gmail.com>
Sent: Friday, May 28, 2021 12:46 PM
To: Borrayo, Raquel@DOT <Raquel.Borrayo@dot.ca.gov>
Subject: Re: SR-49 Safety Barrier Project

EXTERNAL EMAIL. Links/attachments may not be safe.

Thanks Raquel.

If you're seeking public input, we prefer well-timed signals versus roundabouts.

-Greg

On Thu, May 27, 2021 at 4:46 PM Borrayo, Raquel@DOT <Raquel.Borrayo@dot.ca.gov> wrote:

> Hi Greg,
>
> Attached is the presentation from last night along with the draft environmental document. The presentation will be uploaded to the website below, but it hasn't been loaded yet by the web developer.

Project website:

https://deavpm.wixsite.com/pla49sb

And here is the link to the meeting recording:

Webex meeting recording: 4H600 PLA 49 Safety Barrier Virtual Open House (Public Meeting)-20210527 0103-1

Password: MbYFz7sP

Recording link: https://cadot.webex.com/cadot/ldr.php?RCID=abac81e367e64c6ca599ca6e91c28a3d

Please let me know if you need anything else.

Best,

Raquel

Raquel Borrayo

Caltrans District 3 Public Information Officer
Sierra Area

raquel.borrayo@dot.ca.gov

Phone: (530) 701-5209

Caltrans District 3 Website

For real-time highway conditions, visit QuickMap

From: Greg Bala <gpbala@gmail.com>

Sent: Wednesday, May 26, 2021 6:40 PM
To: Borrayo, Raquel@DOT <Raquel.Borrayo@dot.ca.gov>
Subject: SR-49 Safety Barrier Project

EXTERNAL EMAIL. Links/attachments may not be safe.

Hi Raquel,

Could you please reply here a link to the project documents, including the slides presented on May 26 and a recording of the presentation?

Thank you,

-Greg Bala

Caltrans Response:

As noted in the presentation a final decision has not been made as to the use of roundabouts or traffic signals for this project. However, please note that roundabouts are a proven feature for highway design and the Federal Highway Administration has published a number of technical papers on design and benefits, which have been reviewed by Caltrans in partnership with roundabout experts outside the Department to provide the safest and best design possible. Roundabouts provide a number of benefits related to collision and severity reduction, reduction of greenhouse gases due to not having vehicles idle at a signal, and provide a reduction in traffic speed to be able to enter, transit and depart the roundabout as some examples. The article provided is from 2015 and does present both pros and cons for roundabouts and for the Newcastle, United Kingdom location Note that in the same article a FHWA representative stated that they actually encourage and incentivize roundabouts for safety reasons and that researchers at Kansas State found that delays were 65 percent less at a roundabout versus a traffic signal. A search for additional technical papers on this subject did not yield anything substantive. Traffic signals also have benefits over the current two-way stop controlled intersections and those benefits, project footprint, and project cost, are all part of the ongoing internal technical discussions by the Project Development Team as we move forward with this project and seek to make the best decision possible for the project.

7. Hank Stevens

From: Hank Stevens
To: Borrayo, Raquel@DOT
Subject: Re: Hwy 49 Traffic Study
Date: Tuesday, June 1, 2021 10:16:15 AM

EXTERNAL EMAIL. Links/attachments may not be safe.

Thank you for your response. One thing many of our "Nextdoor" neighbor posts is the idea with low cross traffic volume at high speed high traffic volume intersections is that signal lights would allow for better traffic flow on Hwy49, and would only cause few and short flow disruptions when low volume cross traffic arrives at the signal light from Lone Star. I'm sure you have lots of data about those conditions. I was a passenger in a car in Texas last night and we were approaching a roundabout in a residential area. We were safely in the roundabout and a vehicle coming in fast on our right side refused to yield. We avoided a collision because the driver of the car I was in hard-braked to keep from crashing. Many people in that neighborhood have contacted their city government and lodged complaints about near collision experiences they had against the roundabout and asked to have it removed. I don't know enough about all the pros and cons but as a resident needing to access Hwy49 from Lone Star I would feel a lot more comfortable and safe making a left turn onto Hwy 49 triggered by a signal light. Thanks again for allowing us to express our concerns. Hank Stevens.

Sent from my iPhone

> On Jun 1, 2021, at 11:29 AM, Borrayo, Raquel@DOT <Raquel.Borrayo@dot.ca.gov> wrote:
>
> Thank you. I will share your comments with the project team.
>
> Raquel
>
> **Raquel Borrayo**
> Caltrans District 3 Public Information Officer
> Sierra Area
> raquel.borrayo@dot.ca.gov
> Phone: (530) 701-5209
> Caltrans District 3 Website
> **For real-time highway conditions, visit** QuickMap
> <image001.png>
> <image002.png>

From: Hank Stevens
To: Borrayo, Raquel@DOT
Subject: Hwy 49 Traffic Study
Date: Friday, May 28, 2021 6:21:48 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

Hi Raquel,

I live on Garden Court in North Auburn and access highway 49 off Lone Star Rd. I am writing you to express my interest in placing a traffic light at the Lone Star and Highway 49 intersection. I believe this is the most efficient option to reduce collisions (we have had too many including fatalities) and maintain smooth traffic flow. The barrier proposal will just add another problem moving Hwy 49 access to another more remote and what I believe is an inconvenient location. I've also used roundabouts in many locations. I think they work best in non-highway locations. I believe they will create more and unnecessary traffic problems for Hwy 49 through traffic passing by our access off of Lone Star at speeds usually over the posted speed limit during both-congested and light traffic patterns. I'd prefer to wait for a green light at a traffic light to enter Hwy 49 rather than to second guess that someone will slow for me to enter Hwy 49 from a roundabout. My opinion and choice is to go for the traffic light.

Thank you for the opportunity to provide input.

Hank Stevens
4765 Garden Ct
Auburn, CA. 95602

Sent from my iPhone

Sent from my iPhone

Caltrans Response:

Roundabouts are an internationally proven safety countermeasure for collision patterns at intersections. For this corridor, where there have been continuing and multiple complaints about speeding in the corridor, they also provide a benefit of forcing traffic to slow down for short distances on the approach and through the roundabout. It has been noted in research that speeds may also reduce between the roundabouts. As noted during the presentation, a final determination on whether roundabouts or traffic signals has not been made yet, but we will continue to consider public input as part of our project development team discussions as we continue to move forward with this project.

8. Scott Johnson

From: Scott Johnson
To: Borrayo, Raquel@DOT
Subject: Hwy 49 intersection at Florence Lane and Lorenson Road
Date: Friday, May 28, 2021 8:10:11 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

Hi Raquel,

I think the round about will create a better traffic flow. People will need to slow down for it but there will not be a back up like there will be with a light. A round about should cost less and I don't think accessing 49 from Florence will be any harder than it is now with because it will be a 2 lane round about like the one in the picture. When the power goes out and the light starts flashing red there would be a terrible back up.

I use the Florence Lane access to Hwy.49 several times each week as part of my work. I use it in both directions.

Scott Johnson 15215 Bancroft Road Auburn, CA 95602-9324 530-878-1566
scottj@johnsonpianoservice.com

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

9. Susan Fox

From: susan fox
To: Borrayo, Raquel@DOT
Subject: State Route 49 Safety Barrier Project
Date: Saturday, May 29, 2021 7:19:37 AM

EXTERNAL EMAIL. Links/attachments may not be safe.

Hello,

My name is Susan Fox and I live on Lorenson Road off of 49 and have done so since April 2005. I am very concerned about a roundabout going in at the intersection where we have to make a right turn to head into Auburn. There is too much traffic that will be slowed that will not yield on the roundabout to allow us to enter. Please consider a stop light instead. Lorenson Road is a dead end and our only entry or access is Highway 49. I do not have any problems making the left turn on Lorenson after heading north on Highway 49 by waiting in the left turn lane until traffic is clear. I feel like a stop light would be fine, but once again a roundabout on this highway would make that left turn more hazardous.

Thank you,
Susan Fox
916 838 3840

Caltrans Response:

Roundabouts are an internationally proven safety countermeasure for reduction in both numbers and severity of collisions at intersections. For this corridor, where there have been continuing and multiple complaints about speeding in the corridor, they also provide a benefit of forcing traffic to slow down for short distances on the approach and through the roundabout, It has been noted in research that speeds may also reduce between the roundabouts. Entry speeds at the roundabout will be approximately 25 mph and warning signs, both overhead and ground mounted will be provided to remind the public to slow for the roundabouts, As noted during the presentation, a final determination on whether roundabouts or traffic signals has not been made yet, but we will continue to consider public input as part of our project development team discussions as we continue to move forward with this project.

10. James Coughlin

From: James Coughlin
To: Borrayo, Raquel@DOT
Subject: Cal Trans projects on Hwy 49 at Lone Star, Floreonce
Date: Saturday, May 29, 2021 7:29:07 AM

EXTERNAL EMAIL. Links/attachments may not be safe.

Raquel:

I have drive on lots of highways in Europe where there are roundabouts. They keep traffic moving and cause traffic to slow down when entering the roundabout (which is a good thing). Roundabouts reduce the number of drivers speeding and as such will reduce the number of fatal accidents. Roundabouts also reduce the number of amber/yellow light runners, also reducing the number of accidents.

I would love to see roundabouts.

Sincerely,

James Coughlin

15263 Lorie Dr.,
Grass Valley, CA 95949

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

11. Marcie Dubreville

From: Marcie Dubreville
To: Borrayo, Raquel@DOT
Subject: Highway 49, north of Auburn
Date: Saturday, May 29, 2021 9:07:36 AM

EXTERNAL EMAIL. Links/attachments may not be safe.

I am writing as I am in FAVOR of the 2 round abouts at both Florence and Lone Star. I live off Rio Oso and am grateful for the changes of our ingress and egress many years ago! Im familiar and have a 2nd home in Tahoe and have seen the tremendous change from having the new roundabouts. ! And, I dont believe that "back ups" should be a problem!? Getting on highway 49 from my place takes time because of traffic, at times...But because of Dry Creek lights there are large open times..I support round abouts! Thank you, Marcie O. Dubreville

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

12. Carrie Moley

From: Carrie Moley
To: Borrayo, Raquel@DOT
Cc: Ed Moley
Subject: Input on roundabout proposal for Florence and Lone Star
Date: Saturday, May 29, 2021 11:52:53 AM

EXTERNAL EMAIL. Links/attachments may not be safe.

Hi Ms. Borrayo,

Just wanted to share the perspective that my husband and I hold on the proposal to install roundabouts at Lone Star Road and Florence on Highway 49.

We are very supportive of the roundabout concept, and really prefer it over stoplights for multiple reasons:

- Roundabouts will have a speed-calming effect on all traffic (whereas stoplights can even end up encouraging people to speed up for yellow lights or even run red lights)
- Roundabouts keep traffic moving and do not halt traffic in the heaviest direction
- Roundabouts ensure that all traffic flows in the same direction, eliminating head-on and t-bone collisions
- Roundabouts turn every left turn into a right turn
- Because stop lights bring traffic to a complete halt, we feel they have an increased risk of rear-end collisions

I know that Americans aren't familiar with roundabouts, but we quickly got used to them during our 3-week visit to Ireland (even while driving on the opposite side of the road) and found them convenient, sensible, and effective. It even got to the point where my two boys were praising me: "good roundabout Mom!"

Back on 8/19/2011, my husband Ed was hit head-on while in the left turn lane of Lone Star Road. We are lucky he was not paralyzed, as he sustained a serious neck injury. We understand the dangers that a left-turn lane poses even if we had a stoplight, because lights will not prevent crossover collisions.

Thanks for your work on this effort, and please let us know if you need any more input.

Sincerely,
Ed and Carrie Moley

6845 Country Side Lane
Auburn, CA 95602
(530) 269-1106

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

13. Sheila Cesarin

From: Sheila Cesarin
To: Borrayo, Raquel@DOT
Cc: Sheila Cesarin; Shiela Kay Cesarin
Subject: 49
Date: Saturday, May 29, 2021 11:55:25 AM

EXTERNAL EMAIL. Links/attachments may not be safe.

Hello,

I would like to provide some feedback regarding roundabouts vs signal lights at Florence and Lone Star. Signal lights at both intersections would be the best and safest possibility. While roundabouts work well in other areas, putting them on a major highway that already has a ton of traffic plus numerous semi trucks is an accident waiting to happen! Signal lights, if timed properly will help slow traffic down, and a much safer way to get onto 49. Also, if there are red light cameras that will help keep people from running red lights.

Please consider signal lights over roundabouts at those intersections.

Thank you for your time.

Sheila Cesarin
Winding Way

Sent from my iPhone

Caltrans Response:

Roundabouts are an internationally proven safety countermeasure for reduction in both numbers and severity of collisions at intersections. For this corridor, where there have been continuing and multiple complaints about speeding in the corridor, they also provide a benefit of forcing traffic to slow down for short distances on the approach and through the roundabout. It has been noted in research that speeds may also reduce between the roundabouts. Entry speeds at the roundabout will be approximately 25 mph and warning signs, both overhead and ground mounted will be provided to remind the public to slow for the roundabouts, Traffic signals only slow drivers down when they are in a yellow or red phase and there is an expected peak hour issue of queuing of 1300 feet, which will increase the probability of rear end collisions in the queue as traffic comes to a stop or as releasing at low speeds. As noted during the presentation, a final determination on whether roundabouts or traffic signals has not been made yet, but we will continue to consider public input as part of our project development team discussions as we continue to move forward with this project.

14. Nancy Morin

From: nancy morin
To: Borrayo, Raquel@DOT
Subject: Hwy49 Barrier Project Question
Date: Sunday, May 30, 2021 12:15:27 AM

EXTERNAL EMAIL. Links/attachments may not be safe.

Hello Raquel;

My name is Nancy Morin and I live on Lone Star Road (eastside). I'm inquiring in regards to the barrier wall being installed from Lorenson/Florence Road to Lone Star Road.

I understand and agree with the need for some kind of safety measure being constructed (I am in favor of the roundabout idea more so than any other)however, I am not aware or have heard of any considerations being examined for the wildlife in our area. I am not referring to the habitat or marshland but to the animals pathways and movement, on a day to day or nightly basis.

There is almost nothing more disturbing than seeing an animal who is panicked and frantic trying to cross a highway, only to find a barrier (wall) they cannot cross through. Most likely that animal is hit and killed. Has there been any study or analysis done, as to the impact these unfortunate events will have on not only the community but on Traffic, Emergency Response Teams (i.e.First Responders, 911 Calls) State Wildlife Agencies, Wildlife Fish and Game, County Agencies and or Federal Protection Agencies (who will have to rescue or dispose of the bodies)?

Without the solid barrier, a driver can make an adjustment and swerve to miss an animal. A solid barrier wall will eliminate that as an option, possibly increasing collisions into the barrier (wall) by vehicles.

A great number of the people in our area have horses and cattle, who on occasion, are quite gifted at manuvering out of their confines,

Are fences on the outside lanes being considered to keep wildlife and domestic animals off the road, where they could end up against barrier walls? Like is done in the cities?

Thank you for your assistance regarding my concerns, and I look forward to hearing from you in the near future.

Sincerely,
Nancy E. Morin
Lilreddy@att.net

Caltrans Response:

Caltrans is currently involved in internal discussions concerning installing wildlife fencing along State Route 49 to funnel wildlife through an existing cattle crossing located within the project limits. Additionally, the cattle crossing and the bridge that crosses Orr Creek are currently, and will continue to after construction of the project, allow wildlife to cross State Route 49 safely.

15	Submission Time	First Name	Last Name	Email	Phone
2021-05-27T05:59:08Z		Diana	Boswell	loosecow@aol.com	(916) 622-0711
Comment: No roundabouts on highways please!					

Caltrans Response:

Roundabouts are an internationally proven safety countermeasure for reduction in both numbers and severity of collisions at intersections. For this corridor, where there have been continuing and multiple complaints about speeding in the corridor, they also provide a benefit of forcing traffic to slow down for short distances on the approach and through the roundabout. It has been noted in research that speeds may also reduce between the roundabouts. Entry speeds at the roundabout will be approximately 25 mph and warning signs, both overhead and ground mounted will be provided to remind the public to slow for the roundabouts, As noted during the presentation, a final determination on whether roundabouts or traffic signals has not been made yet, but we will continue to consider public input as part of our project development team discussions as we continue to move forward with this project.

16	Submission Time	First Name	Last Name	Email	Phone
2021-05-27T11:58:20Z		Mac	Henderson	rranch@surewest.net	9167598225
Comment: Some areas okay, in most bad. I have seen semi tractor trailer rigs waiting for a break to enter a round about. In my rural area there are a lot of stock trailers being towed by pick ups, same problem and lots of times the trailer cannot make the turn without hitting a curb. If you are towing anything the round a about are horrible. Just because it works in countrys with small autos doesn't mean it will work here. Problem is, if a complete failure due to lack of a proper due diligence, every one keeps their jobs, no accountability. We don't need "global harmonization"					

Caltrans Response:

Traffic volumes off the secondary roads and the U-turn movements are not expected to be significant, as such, traffic should be able to enter the roundabouts with little delay. Roundabouts are designed with a truck apron in order to maintain slower speeds thru the roundabout for traffic by forcing traffic that wants to try and cut through at higher speeds to negotiate the roll-up curbing. This truck apron also assists a truck that would try to go to the left at a signal to use the apron at lower speeds to maintain the truck in lane due to the much larger turning radius of the vehicle versus a car or pickup.

17	Submission Time	First Name	Last Name	Email	Phone
2021-05-27T17:34:53Z		Teresa	Raney	later@suddenlink.net	530 268-0989
Comment: Barrier good _____ round-about BAD! Rather have a signal.					

Caltrans Response:

Roundabouts are an internationally proven safety countermeasure for reduction in both numbers and severity of collisions at intersections. For this corridor, where there have been continuing and multiple complaints about speeding in the corridor, they also provide a benefit of forcing traffic to slow down for short distances on the approach and through the roundabout, It has been noted in research that speeds may also reduce between the roundabouts. Entry speeds at the roundabout will be approximately 25 mph and warning signs, both overhead and ground mounted will be provided to remind the public to slow for the roundabouts, As noted during the presentation, a final determination on whether roundabouts or traffic signals has not been made yet, but we will continue to consider public input as part of our project development team discussions as we continue to move forward with this project.

18	Submission Time	First Name	Last Name	Email	Phone
2021-05-27T18:47:15Z		Ron	Potter	ronpotter@pacbell.net	530-887-5476
Comment: I'm all for safety, but sidewalks in the country , they will hardly ever be used , the expense seems far from warranted. Ingress and egress to Highway 49 safety is important but a roundabout seems like Overkill , isn't there a simpler solution?					

Caltrans Response:

Providing a pedestrian and/or bicycle path through all new or upgraded intersections is a mandatory feature. This is not only to comply with Federally mandated American's with Disabilities Act (ADA) requirements but also because we are a multi-modal agency and we design for the safest possible roadways for all forms of travel, that includes, vehicles, bicycles, and pedestrians.

19	Submission Time	First Name	Last Name	Email	Phone
2021-05-27T20:06:54Z		Judi	butters	judi.butters@gmail.com	(915) 849-2905
Comment: I love the idea.of a roundabout at 49 and Lone Star Rd. We need something. Too hard for us to get out on 49. Thank you					

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

20	Submission Time	First Name	Last Name	Email	Phone
2021-05-28T00:13:56Z		Tom	Loveall	loveallt@gmail.com	5308238895

Comment:
Putting a round about on a 65mph highway will make the congestion worse. This makes no sense. Maybe we can fix the current freeway /roads instead.

Whoever approved the pavement on the freeways that is like driving over cobblestone because it is so noisy should have been fired.

Caltrans Response:

The Traffic Analysis Report completed for the Environmental Document clearly showed that vehicle queuing during the morning and evening rush hours, as people go to/return from work, is significantly higher with a traffic signal (app. 1300 feet) versus a roundabout (app.200 feet). This is because the roundabout allows for continuous free flow traffic, although at reduced speeds on the approach to, travel through, and departure of the roundabout. A traffic signal, alternatively, with traffic on side streets or left turning traffic from the mainline, will cause traffic congestion as vehicles slow to a stop, wait for the signal to cycle, and then wait for the queue to release.

21	Submission Time	First Name	Last Name	Email	Phone
2021-05-28T00:26:50Z		Alexis	Brasier	abequestrian.ca@gmail.com	(530) 401-6900

Comment:
I live on the East side of 49 off Lone Star Rd. How will those of us with Livestock be able to evacuate in a fire emergency with big rigs? I go south and north bound daily between my other job and kids school if a median is put in? Another thing, how are you proposing to slow traffic between everything? For instance at 8:40am May 27th someone was driving on the shoulder going northbound past Joeger going at least 80mph and swerving through traffic. Just one of many times in the 30 years my family has lived at the same address.

Caltrans Response:

If a roundabout is selected, it will have a truck apron on the inside of the through lane to allow tractor trailers or vehicles with trailers to account for their increased turning radius.
Per the California Vehicle Code (CVC) 22349 the speed limit on a highway is 65 mph and 55 mph only applies to two lane highways. Per CVC 21651, this segment of SR 49 is a divided highway because it has a median of more than 2 feet and as such it cannot be classified as a two-lane highway.

22	Submission Time	First Name	Last Name	Email	Phone
	2021-05-28T01:28:24Z	Natalie	Calamia	ncalamia02@gmail.com	8319029917

Comment:
Around about is a very bad idea being as the Highway 49 is like a freeway. If you have ever experienced how 49 was before they created dual lanes on both sides then you will know that this is a bad idea. There used to be bumper-to-bumper traffic backed up from dry Creek to Grass Valley during all Cornish Christmas Victorian Christmas and even after noon work ending time. This route is highly dangerous to have a circle put in the middle of it. There is already a undesirable population increase in our community and horrible murders by vehicles on 49. I fear adding a block in the middle of the highway will create congestion backed up from combie to dry creak and beyond. This is 100% not a resolution. Put up cement dividers to prevent people from cutting across, add a left hand turning lane on both sides that require the 1% of drivers to use instead of the other 99% suffering to get home or the Hospital. Add a overpass if you wish to appease the 1% of the drivers. The entire stretch from dry creak to lone star needs a cement wall down the middle. These people driving these days can care less about rules. They learned to drive on video games. Yellow reflective plastic poles lined down the whole rout if you wish. Test out through the summer. Anything but a roundabout in the middle of a hybrid highway. Can you imagine if a semi truck got stuck in one? Look at all the truckers that seem to not know how to drive down 80 these days. They are not as bright as they once were. They do not educate anyone to drive the way they use too. So for the run on paragraph, this little box does not provide ease for writing a letter. Please do not share my personal information.

Caltrans Response:

The purpose of this project is to place a concrete median barrier to prevent cross centerline collisions, which often lead to fatalities and/or serious injuries. State Route 49 is not classified by the Streets and Highway Code as a freeway, because it does not have controlled entrances at all points, like on I-80 or I-5. As such, it takes much more planning to place a median barrier and still provide points for traffic to safely make a U-turn in a reasonable distance to limit the inconvenience created by the median barrier. We are also required to manage our funding and to be good stewards of the environment for the public. This project will reduce environmental impacts, minimize the taking of residential property while providing a safe facility for the traveling public.

23	Submission Time	First Name	Last Name	Email	Phone
	2021-05-28T04:04:13Z	Eileen	Grider	steeil@pacbell.net	(925) 640-6410

Comment:
Roundabouts are a bad choice fir dealing with the lone star road by 49. Trying to maneuver a vehicle and horse trailer carrying our horses would be extremely dangerous in a round about. We lived in Pleasanton 26. Someone there thought using round about was a good idea. Immediately it was determined worse and they were taken back out. PLEASE do not put round about on lone star and 49. Bad idea. A light is really needed here. We live off lone star but your proposal IMO is going to make it even more if a death trap here

Caltrans Response:

Roundabouts are designed with a truck apron in order to maintain slower speeds thru the roundabout for traffic by forcing traffic that wants to try and cut through at higher speeds to negotiate the rolled up curbing. This truck apron also assists a truck that would try to go to the

left at a signal to use the apron at lower speeds to maintain the truck in lane due to the much larger turning radius of the vehicle versus a car or pickup.

24	Submission Time	First Name	Last Name	Email	Phone
	2021-05-28T16:48:42Z	Keith	Schlotthauer	kschlotthauer64@gmail.com	510-228-6981
Comment: We live off Lone Star Valley Rd. There has to be something put in there. Sometimes it takes 10 mins. to cross 49....especially in the mornings. My faher-in-law about a month and a half ago had to rescue a lady from her car because of a crash....she went into the ditch. He pryed the door open and got the lady and child out. A roundabout would be a great thing. They will have to put up a big BLINKING sign to let people know because there are a ton of IDIOTS that think 49 from Dry Creek to Combie is a drag strip. I have had people pass me in the center divider going 80+ mph.					

Caltrans Response:

One of the additional features that will be placed on either end of the project for both directions of travel is an overhead beacon with signage to note that there are roundabouts or signals ahead and to prepare to reduce speed. Additional ground mounted signage will also be placed in advance of the intersections to alert the public.

25	Submission Time	First Name	Last Name	Email	Phone
	2021-05-28T21:22:47Z	Gemma	Rudy	gemmarudy@yahoo.com	9167699685
Comment: Wildlife has a difficult crossing of hwy 49. A wall in the middle would make it impossible. Has there been a wildlife study or consideration? I firmly believe that the existing stoplights on Hwy 49 are working to solve traffic flow entering 49. Cars will be running into a center wall, just as dangerous as no wall.					

Caltrans Response:

Caltrans is currently involved in internal discussions concerning installing wildlife fencing along State Route 49 to funnel wildlife through an existing cattle crossing located within the project limits. Additionally, the cattle crossing and the bridge that crosses Orr Creek are currently, and will continue to after construction of the project, allow wildlife to cross State Route 49 safely.

26	Submission Time	First Name	Last Name	Email	Phone
	2021-05-28T23:18:39Z	Grace	Hyde	gracehyde12@gmail.com	8315884323
Comment: Hi, I believe the roundabout option will be better for this community if people are knowledgeable about proper etiquette using one, they will slow down traffic and continue the movement of cars so traffic isn't backed up with lights like for most of the 49 highway. It's also a cheaper cost and I think improves how an area looks if the roundabout is done in a nice way it can improve the look of the town.					

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

27. Dale Turner

From: Dale Turner
To: PLA 49 Safety Barrier 4H600@DOT
Subject: Public comment
Date: Monday, May 31, 2021 10:20:24 AM

EXTERNAL EMAIL. Links/attachments may not be safe.

Dear Highway 49 safety The barrier team, I just wanted to put my input in for the project and I would vote for Roundabout intersections. We have three adult drivers Who use Highway 49 between Lake of the Pines in Auburn on a daily basis.
I am thankful that Caltrans has made this decision to improve the safety of that portion of highway. From reading and watching the presentation I think roundabout would provide a safer and more effective travel route for all. Thanks so much for your time.

Sent on behalf of Dale, Susan and Yvonne

Dale Turner
Dale95602@gmail.com
24441 Timber Ridge Dr
Auburn CA 95602

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

28	Submission Time	First Name	Last Name	Email	Phone
	2021-06-01T16:01:04Z	Jo Anne	Carmona	jacarmona49@gmail.com	

Comment:
I have lived in Christian Valley Park for 43 years. For the past 30 years I have always believed (and still do) there should be a Traffic Light at that intersection. Roundabouts would be a disaster. People have to slow down for other traffic lights, they can slow down for one more.

Caltrans Response:

As noted in the presentation a final decision has not been made as to the use of roundabouts or traffic signals for this project. However, please note that roundabouts are an internationally proven safety countermeasure for highway design and the Federal Highway Administration has published a number of technical papers on design and benefits, which have been being reviewed by Caltrans in partnership with roundabout experts outside the Department to provide the safest and best design possible. Roundabouts provide a number of benefits related to collision and severity reduction, reduction of greenhouse gases due to not having vehicles idle at a signal, and provide a reduction in traffic speed to be able to enter, transit and depart the roundabout as some examples. Traffic signals also have benefits over the current two-way stop controlled intersections and those benefits, project footprint, and project cost, are all part of the ongoing internal technical discussions by the Project Development Team as we move forward with this project and seek to make the best decision possible for the project.

29	Submission Time	First Name	Last Name	Email	Phone
	2021-06-02T12:58:14Z	Emilee	Key	emileekey@yahoo.com	5309067735

Comment:
Commuting 49 sucks already but we really need stop lights that are sensored not timed at Lone Star, Florence and Joeger. I think on this speed of a road round abouts would be dangerous during rush hours. Ugh commute will be longer but too many lives lost on this stretch and it will force slow downs for those traveling it at 80 mph.

Caltrans Response:

As noted in the presentation a final decision has not been made as to the use of roundabouts or traffic signals for this project. However, please note that roundabouts are a internationally proven safety countermeasure for highway design and the Federal Highway Administration has published a number of technical papers on design and benefits, which have been reviewed by Caltrans in partnership with roundabout experts outside the Department to provide the safest and best design possible. Roundabouts provide a number of benefits related to collision and severity reduction, reduction of greenhouse gases due to not having vehicles idle at a signal, and provide a reduction in traffic speed to be able to enter, transit and depart the roundabout as some examples. Traffic signals also have benefits over the current two-way stop controlled intersections and those benefits, project footprint, and project cost, are all part of the ongoing internal technical discussions by the Project Development Team as we move forward with this project and seek to make the best decision possible for the project.

30. Mike Johnson

From: Mike Johnson
To: Borrayo, Raquel@DOT
Subject: Tonight"s 2nd meeting re Hwy 49 Safety Project
Date: Wednesday, June 2, 2021 1:09:33 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

Hi Raquel,
I'm unable to attend tonight's virtual meeting due to another commitment but I do want to weigh in as an affected resident on Winding Way (served by Lone Star Rd.)

While I understand the arguments promoting traffic circles as more efficient and cost effective than traffic control lights, I also believe that engineers only find them more efficient when incoming traffic is balanced. The flow at both the Lorenson and Lone Star intersections is overwhelmingly north-south. I've also read that motorists find them a headache when there is more than one roundabout on the same roadway.

The proposed center barricade is also going to be a headache for those living on the affected corridor: often forcing them to drive in the opposite direction of intended travel to make a u-turn. While it may only affect a modest number of residents today, the problem will grow with future development along the corridor.

I'm in favor of intelligently controlled traffic lights and a reduction of the speed limit to 60 mph.
I haven't studied the accident data but I suspect that the collision rate wasn't helped by the raising of the speed limit to 65 some years ago. People are routinely driving 70+ mph on this stretch of Hwy 49 and there doesn't seem to be much of an enforcement presence.

Thank you.
Respectfully,

Mike Johnson
5055 Winding Way
Auburn, CA 95602
(858) 518-3025

Caltrans Response:

A traffic circle is different from a roundabout. A traffic circle requires traffic to yield to entering traffic at each entry point versus a roundabout, where traffic in the roundabout has the right of way over entering vehicles. Roundabouts are an internationally proven safety countermeasure and reduce the number of collisions and collision severity more than a traffic signal. The primary purpose of this project is to install the concrete median barrier to address the ongoing cross median collision pattern. The reason that roundabouts or traffic signals will be installed at the primary intersections at the end of the barrier is to provide a safe U-turning movement for traffic that has to travel out of direction. As to speed, California Vehicle Code (CVC) 22349 establishes the speed limit as 65 mph in California, unless on a two-lane undivided highway. A highway is considered a divided highway if there is a divided section at least 2 feet in width, so Highway 49, with the center lane greater than 2 feet in width, is considered a divided highway by the CVC.

31. Jim Kaiser

From: Jim Kaiser
To: Borrayo, Raquel@DOT
Subject: Highway 49 Round-About Proposal
Date: Friday, June 4, 2021 2:10:28 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

Ms. Borrayo:
I don't have a strong opinion about the choice of Roundabouts vs Lights. I do have some observations as one who frequently uses the Hwy 49 / Florence intersection when headed north from Florence toward Grass Valley, and back. I rarely turn left onto Hwy 49 from Florence, and never go straight across the highway.

1. There is VERY little traffic to/from the side streets. I've heard that unbalanced roundabouts are not good for such traffic situations and make merging from the low volume side roads difficult, particularly when trying to make a left hand turn onto the busy road (Hwy 49). It seems that a signal that only changed when cars approached from the side streets would work well.
3. There is no pedestrian traffic crossing Hwy 49 at Florence.
4. Longer merge lanes onto 49 with no light would take care of all the right hand turns/merging needs. Left turns would still be a problem during certain times-of-day.
5. It appears from the roundabout rendering that turning left (say southbound) onto Hwy 49 with a long trailer (like mine) would leave the trailer perhaps blocking both northbound Hwy 49 lanes while waiting for the southbound roundabout lanes to clear. That seems hazardous. It seems the same problem could occur when turning left off of Hwy 49 onto Florence.
6. Make sure that the roundabout will accommodate full-length semi-truck/trailers.
7. Most of the new roundabouts I've seen locally seem to be just too small in diameter. Larger ones would be less disruptive. There's plenty of land at the Florence intersection.
8. If the real objective is to slow the traffic down to 25 or so to make merging/turning safer, add signage and rumble strips or undulations across the existing roadway and leave the intersections as is.

On another note, please get the Hwy 49 traffic signals timed from Dry Creek to I-80. It's a complete mess now. (I recognize there is construction). Also, the left turn light from Bell onto southbound Hwy 49 only lasts long enough to clear about half the queued cars. Consequently, in almost every cycle, at least one car runs the newly red left turn light in frustration.

Thank you for your attention,
Jim Kaiser
Christian Valley

Caltrans Response:

1. There will be some unbalanced traffic at the roundabout as Highway 49 has considerably more traffic than the secondary roads. This was accounted for in the Traffic Analysis Report by the software used to evaluate the roundabout. As noted in the presentation, roundabouts are much safer than a two-way stop-controlled intersection (the current condition) and also provides significant collision reduction versus a traffic signal. As to making a left-hand turn, traffic in the

roundabout has right of way, so there should be little impact. Because entry speeds are designed to be near 25 mph, there should be plenty of gaps in traffic for drivers entering from the secondary roads and the delays currently faced should be reduced, hopefully significantly.

3. Although the Traffic Analysis Report found minimal pedestrian or bicycle traffic, Caltrans still has a responsibility on retrofit or new construction to comply with the Americans with Disabilities Act requirements to provide for pedestrians and bicycles as part of our design.

4. The traffic signal alternative provides for a U-turn acceleration lane to accommodate the truck turning radius for a 65-foot-long vehicle. This will also provide a benefit to drivers turning right from the intersections. Left turn movements from the traffic signal will be controlled by a dedicated traffic signal phase. For the roundabout, once a vehicle enters the roundabout it has the right of way until it exits the roundabout, whether that is for a thru movement, a left turn movement or a U-turn movement.

5. See answer in Item 4 above. As for truck or trailer turning radius, the roundabout is designed to accommodate a 65-foot-long vehicle which will use the truck apron to account for the increased turning radius of the vehicle.

6. This is answered in Item 5 above, the roundabout is designed for a 65-foot-long vehicle.

7. The roundabouts have approximately a 160-foot diameter and are being designed to accommodate 2 thru lanes of traffic and a turning radius for a 65-foot-long vehicle.

8. Leaving the intersection in its existing form is not an option because it does not have sufficient width to allow for a U-turning movement for up to a 65-foot-long vehicle. The roundabout is designed with an approximate 25 mph entry speed, which is needed to control speed through the roundabout and at the exit. Transverse rumble strips are usually only placed on the roadway for unique conditions, per the California Manual of Uniform Traffic Devices. These are usually placed where there are no other options to alert the public of the condition. In this case, the current design includes an overhead flashing beacon with signage, in advance of the first intersection in both directions of travel to alert the public to slow down for either the traffic signal or the roundabout. Both intersection approaches from both directions will have additional ground-based post mounted signs to alert the public of the upcoming feature, whether that is a traffic signal or a roundabout.

As to the traffic signals between Dry Creek and I-80, plus the new signals recently installed, they are either already interconnected for the existing signals, or will be interconnected once operational for the newer signals. The interconnections between signals is in accordance with applicable standards

32	Submission Time	First Name	Last Name	Email	Phone
	2021-06-04T15:36:06Z	Ciara	Hart	ciaragonsalves@yahoo.com	7073847023

Comment:
I wasn't able to attend the presentations so I was only able to review the website and print materials. Do you have more information and research into the accidents? Specifically:
1. 12 accidents does not appear like a practical reason of tax payer dollars to pay for a $33/Mil project. How do the number of accidents compare to similar or surrounding areas with regard to number of accidents and project cost?
2. What did the outcomes of the accident investigations speak to with regard to cause of accident? Were drivers impaired or under the influence? Factors that caused the accidents were not shared in the printed materials, to my knowledge, which would speak to the problem itself. I would be interested in seeing that the correct issue is being resolved: road conditions vs. bad drivers or people making poor choices.
Thank you.

Caltrans Response:

1. This project was identified as part of the Highway Safety Improvement Program (HSIP) Cross Median Collision Monitoring Program. This program, has specific guidelines for the number of cross median collisions over a specific segment of highway that warrant further study or remediation and this project met those requirements and has been reviewed by both Caltrans Safety and the FHWA for its feasibility.
2. Our Traffic Safety team reviews each collision independently based on what is provided by the reporting agency (usually the CHP) for all contributing factors as to the root cause of the collision. However, as noted above, the Monitoring Programs have unique and specific guidelines based on number of collisions that meet the Program requirements. As a point of reference, we have additional Monitoring Programs for Two and Three Lane Cross Centerline Collisions, Wrong Way Collisions, Pedestrian Collisions and Bicycle Collisions that are also monitored on a routine basis.

33	Submission Time	First Name	Last Name	Email	Phone
	2021-06-04T16:14:02Z	Roger	McCort	roger.mccort@gmail.com	4156544695

Comment:
Roundabouts are the way to go! While they may be unfamiliar to some, I have seen them implemented effectively in many communities. In these locations, they will have a definite advantage over traffic lights in practice, and the fact they cost less is a bonus. Even if they would cost more, I'd still recommend them!

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

34. Rick Couvrette

From: rick couvrette
To: PLA 49 Safety Barrier 4H600@DOT
Subject: Roundabouts versus stop lights
Date: Friday, June 4, 2021 10:05:14 AM

EXTERNAL EMAIL. Links/attachments may not be safe.

As a resident and rancher in the area of this project I have major concerns with the roundabout option proposed for the Lone Star and the Lorenson Rd intersections. # 1) This option makes it next to if not impossible to cross Hwy 49 when there is normal traffic. Not only is this an inconvenience for me as a local it is a huge problem for trucks and trailers that need to cross the Hwy. This may not seem big however this problem is completely eliminated with the stop light option. # 2) The Hwy congestion today is just the beginning of a future nightmare as Nevada county keeps growing and no new routes to mitigate the increase of traffic. A roundabout will slow the traffic at these points to a point of causing more backup than what is already a problem. Also a Roundabout allows no ability to mitigate or tune for events and or situations such as commute traffic or emergencies. In other words a round about is not adjustable and has few possibilities for improvements or mitigation where again a traffic light is at least tunable for situations or times of emergencies. # 3) Emergencies need adjustments for traffic flow. One tool the emergency services have today is OPTICOM or devices like it to provide traffic flow through intersections in favor of the emergency equipment. The roundabout option has no such ability and in fact would prevent timely movement of emergency equipment or even evacuation through these intersections. I Know this because I served in the fire service for 34 years in this area and can give you first hand experience concerning moving through an area that has roundabouts versus controlled light intersections. ROUNDABOUTS don't work for an emergency when you have heavy traffic and Hwy 49 does have heavy traffic and will have even more in the future. # 4) The land imprint of a roundabout is huge compared to the stop light option. I question the cost of each proposal when considering this point alone. I may not be the sharpest pencil but I can see a huge piece of real estate need to make these roundabouts and that is probably a moving target at best with the target moving upward daily.

How a roundabout even got considered is beyond me. Every point I have brought up should be good reason to eliminate the roundabout proposal let alone the fact that I can bring up three seriously valid reasons a traffic light is far superior for this situation. I seriously hope that Caltrans has not become numb to the facts here as a roundabout is a very miss guided option.

Thank you
Richard Couvrette
4722 Bell Rd Auburn CA
capt2512@yahoo.com

Caltrans Response:

Roundabouts are an internationally proven safety countermeasure for reduction in both numbers and severity of collisions at intersections. For this corridor, where there have been continuing and multiple complaints about speeding in the corridor, they also provide a benefit of forcing traffic to slow down for short distances on the approach and through the roundabout, It has been noted in research that speeds may also reduce between the roundabouts. Entry speeds at the roundabout will be approximately 25 mph and warning signs, both overhead and ground mounted will be provided to remind the public to slow for the roundabouts. As noted in the presentation a final decision has not been made as to the use of roundabouts or traffic signals for this project. Your specific questions are addressed as follows:

1. Entry speeds at the roundabout will be approximately 25 mph. As such, traffic entering from the secondary roads should have a number of gaps for entry and the time that vehicles currently spend waiting for mainline access should be reduced, hopefully significantly reduced.
2. According to a Kansas State study, delays at roundabouts are 65 percent less than at a traffic signal.
3. We have been coordinating with Emergency Services as this project is developed and will continue to do so as the project continues, and an alternative is selected. In a major emergency there may be significant congestion, that is expected. The segment of Highway 49 on the approach to the project is 5 lanes in both directions with 8-foot shoulders. Emergency services will still be able to use the center lane on the approach to the traffic signals or roundabout if congestion significant, they at the roundabout they can merge at the chicane and most smoothly through the roundabout. Then if congestion is significant in the concrete median barrier section, emergency services will have the 8-foot-wide shoulder to use to move past traffic.
4. The proposed traffic signal has to provide space to allow a U-turn for a 65-foot-long tractor trailer, plus an acceleration lane adjacent to the right shoulder. The footprint of the traffic signal is not significantly different than the roundabout when all the necessary land requirements are compiled.

35. Steve Aldridge

From: Steve Aldridge
To: PLA 49 Safety Barrier 4H600@DOT
Subject: Highway 49 and Lonestar Rd.
Date: Friday, June 4, 2021 10:12:53 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

Do not install roundabout and divider. Install an over pass, or traffic signals. A roundabout on highway 49 is stupid. A roundabout and divider won't prevent a drunk driver from hitting someone. They can still hit someone from behind, or enter the highway going the wrong direction and still hit a car head on.

Sent from Mail for Windows 10

Caltrans Response:

As noted in the presentation, a final decision on roundabout or traffic signal has not been made to date. The primary purpose of the project is to install a concrete median barrier to prevent cross centerline collisions and the roundabout or traffic signal will provide additional safety benefits at the two intersections near where the median barrier ends. We need to be good stewards of public money and interchanges were considered, but their right of way needs, environmental impacts, and significant costs caused that alternative to be rejected. Rear end collisions at either feature may still occur, but they should have reduced severity versus the collisions currently occurring at the intersections. Impaired drivers on the highway are always a concern, but that is a CHP responsibility to address.

36	Submission Time	First Name	Last Name	Email	Phone
	2021-06-05T03:20:21Z	Cynthia	Davis	cedavis1950@gmail.com	5303207089

Comment:
I don't see how crosswalks at a non-signaled intersection can possibly be considered safe for pedestrians. I don't see any information on the estimated speed of vehicles entering and traveling in and out of the roundabouts. Vehicles on 49 are not watching for pedestrians, they are in a hurry and will travel at excessive speeds regardless of roundabouts and bumper strips. Why not include an overhead walk-way for bicyclist and pedestrians to cross 49 safely.

Caltrans Response:

The chicanes and roundabouts are designed to slow down traffic entering the roundabout to near 25 mph. It is a driver responsibility, per the California Vehicle Code, to watch for other drivers, bicyclists, and pedestrians that are also using the roadway and to react accordingly. Pedestrians or bicyclists will have a safer route to travel, regardless of which alternative is implemented, versus the current condition. The Traffic Analysis Report noted that pedestrians and bicyclists were minimal or absent at these locations during the October 2019 traffic study. A pedestrian/bicycle bridge would require additional right of way, would affect our environmental response requirement, and would add additional costs and delays to putting this project in place to reduce cross centerline collisions, which are continuing since the project was initiated.

37	Submission Time	First Name	Last Name	Email	Phone
	2021-06-05T14:59:02Z	Catherine	Haagen-Smit	chaagensmit@gmail.com	

Comment:
This is to express support for the State Route 49 barriers and traffic circles at both intersections. This would make this stretch of the highway much safer, would reduce collisions and provide an better quality driving and bike riding experience. Thank you.

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

38	Submission Time	First Name	Last Name	Email	Phone
	2021-06-05T19:26:39Z	Courtney	Pasch	cpasch06@gmail.com	9168218590

Comment:
I recently saw an article in which the public was asked to submit a comment which type of safety upgrades they prefer. I wanted to suggest the round about option so as to not further slow traffic on Highway 49 while still reducing the of accidents and injuries.

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

39	Submission Time	First Name	Last Name	Email	Phone
	2021-06-05T20:53:48Z	John	Denniss	johndenniss@icloud.com	9169458904
Comment: Roundabouts as they slow traffic. Drivers constantly jump the lights at CA49 and Combie road					

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

40	Submission Time	First Name	Last Name	Email	Phone
	2021-06-06T03:47:05Z	Kat	Kiraly	motleykat@comcast.net	9253239074
Comment: Having round-abouts implemented on 49 makes much more sense than having stoplights. The round-abouts keep traffic flowing without abrupt starts and stops and lessen the chance of accidents.					

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

41	Submission Time	First Name	Last Name	Email	Phone
	2021-06-06T15:01:42Z	Joy	Myers	myersflat1@gmail.com	5308238499
Comment: This roundabout idea doesn't seem to thought through very carefully. Traffic on 49 getting heavier and moving faster, a round about will make through traffic swerve around the roundabout but not slow down. Turning traffic will have to stop and wait for space to turn, causing backup. I vote for a stop light. They work well at other locations along hwy49.					

Caltrans Response:

The roundabouts are being designed to require an entry speed of approximately 25 mph, so traffic will have to slow down through the chicanes and at the entrances to be able to enter safely. Overhead signs will be placed in advance of the first roundabout in each direction to remind traffic that they are coming up on roundabouts and need to reduce speeds accordingly. Traffic that would normally make a left turn will have priority once they enter because all entering traffic has to yield to traffic already in the roundabout.

42	Submission Time	First Name	Last Name	Email	Phone
	2021-06-07T14:57:04Z	Elizabeth	Staats	eastaats@gmail.com	5303681773

Comment:
I would like to see Option #2 highly considered. You only have approx $1.6 M difference, however you have a higher percentage of more safety. The ability for big rigs, fire engines to have stop lights is much more efficient and safe for these larger vehicles. Additionally, having traffic lights may reduce some speed but it would also reduce the traffic flow at these 2 very dangerous intersections. I extremely hope the committee strongly consider and decide to go with the option where street lights are used vs the round around option for the reasons I have stated. Thank you.

Caltrans Response:

Roundabouts are safer than traffic signals when it comes to collision and collision severity reduction. Either option will have streetlights to illuminate the intersection. Neither option reduces traffic volumes. The traffic signals, per the Traffic Analysis Report, have much larger queues in the peak hours versus a roundabout. Additional queue length increases the potential for rear end collisions in the queue. Big rigs and fire engines will be able to transit through the roundabouts safely as a truck apron is provided to account for their turning radius and entering vehicles have to yield to vehicles already transiting through the roundabout.

43. Valerie Harrison

From: Valerie Harrison
To: PLA 49 Safety Barrier 4H600@DOT
Subject: Signals at Lonestar and Lorenson
Date: Sunday, June 6, 2021 5:20:27 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

Hello,

I live at 6725 Estates Court in Auburn. To get to my house from Hwy. 49 going north, it is necessary to turn left onto Lonestar Road. I am glad that you are putting a safety barrier on this road and doing something to make turns safer. I would like to request that you put in traffic lights at Lonestar and Lorenson rather than roundabouts for these reasons. There are no roundabouts on this highway or anywhere in the vicinity. There are signals at Dry Creek Road and Combie Road. Drivers are used to these and should have little trouble adjusting to two new ones in the future. Roundabouts will require drivers to slow down considerably which can cause a back up and rear end collisions as drivers wait for traffic to clear to make the left turn. Roundabouts are unusual and may cause accidents for drivers who are unfamiliar with the area.
There will be times of low traffic during the night hours. Signals can accommodate these traffic patterns. Roundabouts would be more dangerous at night. Please consider the long term safety and traffic use and install signals.

Thank you,

Valerie Harrison

Valerie Harrison
6725 Estates Court
Auburn, CA 95602
530-269-2538
valgal930@gmail.com

Caltrans Response:

As noted in the Traffic Analysis Report, the queuing during the peak hours of morning and afternoon will be significantly more at the traffic signals versus the roundabout. The potential for rear end collisions at the traffic signal is probably higher, due to a 1300 foot queue coming to a stop or being stopped for a red light versus a roundabout with a constant flow through, especially given the light levels of traffic off of the secondary roads. The Project Development Team continues to evaluate what feature will be placed at the intersections and this decision will be made at a later date.

44. Frank & Lana Van Hoesen

June 7, 2021

Caltrans PLA 49 Safety Barrier Project
Attn: Sandeep Sandhu
703 B Street
Marysville, CA 95901

Dear Sir:

Regarding the Roundabouts or Traffic Signals concerning Lorenson Road, Florence Road and Lone Star Road input by concerned residents who live on these County Roads the proposed Hwy 49 project would just increase accidents at these locations if the Roundabouts were installed. We are natives of Auburn and have lived on Lorenson Road for 21 years, getting on Hwy 49 let alone getting across to go to Grass Valley or from Florence Road to get on to go to Auburn is at the most a true test of courage.

The traffic has increased a lot and there are times now when you do not have an opportunity to merge out or cross over to go to Florence across the street, plus the average speed I am sure is 70 to 75 on 49. We feel the roundabout would be far more dangerous for people our age to accomplish such a feat.

The Traffic signal at Lone Star and Lorenson would allow a short break to allow us to get out and onto Hwy 49 and across safely. A good example is the Traffic signal at the Nevada County intersection of Lime Kiln & Hwy49, that allows 4 way traffic to cross and is a break in the traffic flow that enables side streets to get on and off Hwy 49.

What Hwy 49 needs is the Traffic Signals that slows the traffic down and would be a more reasonable method of decreasing the amount of accidents, we don't see the slowing of traffic enough to allow us to enter or exit the highway onto our street with the roundabout. Regarding the theory that our area will increase in growth will not happen, the property directly across from our home is in a Land Conservatory with hundreds of acres that cannot be built on, same across the Hwy, and up to Cramer Road.

We do hope you will consider our position, I have been told you have not had many comments from our area, this can be partly due to the fact we have very limited access to the internet if any for people to go online, not a very easy way to express all of our residents opinions.

With regards

Frank & Lana Van Hoesen
11900 Lorenson Road
Auburn, CA 95602
530-887-9696

Lana Van Hoesen
Frank Van Hoesen

Caltrans Response:

Roundabouts are specifically designed to require an entry speed of approximately 25 mph and a slightly faster through and exit speed. Roundabouts are also safer than the existing 2 way stop controlled intersection or a intersection with a traffic signal, they reduce not only collisions as a whole but more importantly, they reduce severity significantly. As noted in the presentation, the Project Development Team is still working towards selecting the best alternative for this project, be that roundabouts or traffic signals.

45. Roger Pope

From: Roger Pope
To: PLA 49 Safety Barrier 4H600@DOT
Subject: Proposed BarrierProject
Date: Tuesday, June 8, 2021 5:33:59 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

Gentlemen;

Please do not use roundabouts on a major highway such as State Route 49. Many drivers have difficulties with maneuvering roundabouts even at slow speeds.

With speeds used on that highway in that area, stop lights would be a much safer approach.

Thank you for your consideration,

Roger Pope

rlpope36@sbcglobal.net

Caltrans Response:

Roundabouts are an internationally proven safety countermeasure for reduction in both numbers and severity of collisions at intersections. For this corridor, where there have been continuing and multiple complaints about speeding in the corridor, they also provide a benefit of forcing traffic to slow down for short distances on the approach and through the roundabout, It has been noted in research that speeds may also will reduce between the roundabouts. Entry speeds at the roundabout will be approximately 25 mph and warning signs, both overhead and ground mounted will be provided to remind the public to slow for the roundabouts, As noted during the presentation, a final determination on whether roundabouts or traffic signals has not been made yet, but we will continue to consider public input as part of our project development team discussions as we continue to move forward with this project.

46. Ann Morrison

From: Ann Morrison
To: PLA 49 Safety Barrier 4H600@DOT
Subject: Roundabouts
Date: Tuesday, June 8, 2021 5:56:10 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

I've seen roundabouts in the Clear Lake area as well as in Gardnerville, NV and people do not yield the right of way. I'd rather take my chances with traffic signals. Some big rig drivers don't even slow down yet alone read a yield sign!!
Sent from Yahoo Mail on Android

Caltrans Response:

As with any new feature on the highway, whether that be a traffic signal, a roundabout, a lane drop, etc. drivers must travel through the feature a few times so that they become used to the feature. The same will be true here, whether we place a traffic signal or a roundabout. The advanced overhead and ground-based signage will be in place to alert the public of the upcoming feature and drivers should react to those signs accordingly. Additionally, for a short period after installation, Portable Changeable Message Signs will be in place to provide additional notice to the new highway features.

47. Harriet White

From: Harriet White
To: PLA 49 Safety Barrier 4H600@DOT
Cc: cindy.gustafson@placer.ca.gov
Subject: Roundabout or traffic signals
Date: Wednesday, June 9, 2021 1:20:50 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

Having used high-speed highway roundabouts in Arizona I feel compelled to comment. This type of roundabout is very similar to the two on Hwy 93 north of Wickenburg, AZ. They are effective, but they are confusing and cause great movement of traffic within the circles as the drivers don't know how to properly use the lanes (even though there are directional signs!). I have seen this same situation on the local DeWitt Center roundabout and the two roundabouts on Rocklin Road between Hwy 80 and Pacific/Taylor Road.

People get confused with roundabouts. I think the simplest solution would work best for most drivers. Therefore, I suggest the traffic barrier/traffic signal solution for the problems at these sites along Hwy 49.

Harriet White
North Auburn
530.823.3368

Caltrans Response:

Thank you for your response. As noted in the presentation, the Project Development Team is still working to identify the best solution for the intersections, be that roundabouts or traffic signals. Either option has both pros and cons for constructability and cost, but both will make the intersections safer than the current two-way stop-controlled intersection. Our team will continue to find the most effective and safest solution for these locations.

48. Louis & Carol Salatino

Louis & Carol Salatino

10111 Ranch Rd

Auburn, CA 95602

salatinolou@gmail.com

June 9, 2021

To: Sandeep Sandhu

Re: Caltrans PLA 49 Safety barrier project

We are writing in regard to this project and the inherent safety issues that are not being considered.

- From our experience of living in Italy for four years we know that round-a-bouts are **never** put on busy roads with **high-speed limits** such as Hwy 49. Even on smaller roads with people who have decades of experience driving on them cause numerous occasions for traffic hazards. The design may look pretty and well thought out on computer simulations but **in reality,** it comes down to the **inexperience** of drivers encountering these at **high speeds**.
- We have seen overturned car carriers at the round-a-bout placed in Truckee at the freeway offramp. Accidents constantly occur where the speed limit was less yet still used by drivers who have never encountered round-a-bouts before.

When this was first proposed to our community gathering at a meeting last year the representatives told us that the location at Lone Star Road was unsuitable for a signal because of a blind curve yet on Auburn/Folsom Road at Cavitt Stallman road a signal was installed and that is a worse blind curve than Hwy 49 has. That argument was not even presented in this newspaper article so your minds must have changed on that issue.

- Round-a-bouts **will not** make it easier for those trying to enter Hwy 49 from Lone Star and Lorenson/Florence roads as the traffic will be even more condensed and people will not be used to ceding the right of way to those entering or exiting the round-a-bout.

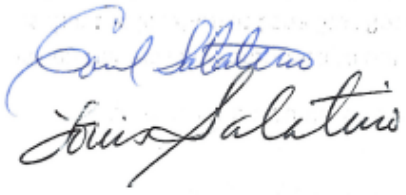
The proposed barrier will now make getting to our home even more dangerous than before as we will have to go past our Cramer Road turn where we had plenty of line of sight before making our left turn.

Signals will make it safer for all parties because we are used to them. The construction time is also considerably less in installing signals than a complicated round-a-bout and should be less costly.

*Did you consider a third alternative? Reduce the speed to 55 MPH on Hwy 49 and **ENFORCE IT**! That would save considerable money too!!!

Sincerely,

Lou & Carol Salatino



Caltrans Response:

As with any highway feature, such as a roundabout or traffic signal or any other type of intersection, it is up to the driver to recognize the roadway configuration and drive it accordingly. Also, all roadways are designed based on the 85-90 percent of drivers who are following the rules of the roadway and the legal requirements of the State. Either feature, roundabout or traffic signal, has benefits versus the current two-way stop controlled intersection and the Project Development Team will continue to work to identify the pros and cons of each feature and make a determination on what is the most practicable and safest.

Per the California Vehicle Code (CVC) 22349 the speed limit on a highway is 65 mph and 55 mph only applies to two lane highways. Per CVC 21651, this segment of SR 49 is a divided highway because it has a median of more than 2 feet and as such it cannot be classified as a two-lane highway. We are not able to reduce the speed limit to 55 mph on this segment. Speed enforcement is under the purview of the California Highway Patrol.

49. James Crandall

From: james crandall <jcrandall96@gmail.com>
Sent: Friday, June 11, 2021 7:25 AM
To: Borrayo, Raquel@DOT <Raquel.Borrayo@dot.ca.gov>
Subject: Lonestar Highway 49 meeting

EXTERNAL EMAIL. Links/attachments may not be safe.

Hello Rachel,
I just wanted to express my preferred method of the traffic mitigation for Lonestar Cramer roads. I've driven around abouts in other countries which seems to be the preferred method these days and once we came familiar with them they are definitely my preferred method. Now that the US is catching up with other countries in the use of roundabouts I have had a fair amount of experience with them in the US and I feel that traffic definitely flows better versus a light so please consider putting in roundabouts at those two locations rather than lights.
Thank you,
James Crandall

Sent from my iPhone

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

50. Sharon Elam

From: Sharon Elam <shelam_1@yahoo.com>
Sent: Saturday, June 12, 2021 4:31 PM
To: Vandell, Sam L@DOT <sam.vandell@dot.ca.gov>
Cc: Borrayo, Raquel@DOT <Raquel.Borrayo@dot.ca.gov>
Subject: Input- Hwy 49 improvements

EXTERNAL EMAIL. Links/attachments may not be safe.

Just watched your online presentation for the improvements to Hwy 49 between Florence/Lorenson and Lone Star Roads in Auburn. Thank you for doing this. You did a good job. It was very informative.

As someone who has lived not far from the intersection of Hwy 49 & Florence Lane since 1975, I've watched Hwy 49 from Auburn to Grass Valley change from a sleepy two lane country road to a high traffic, high speed dangerous corridor.

Am very pleased with your decision to add the cement dividers. That will make it safer. Thank you.

However, when it comes to the choice of a stop light or roundabout, I think the traffic light is the appropriate choice.

The consideration of a roundabout might look good on paper, but I do not think it would be a consideration if whoever suggested it lived in the area effected. Let my explain my objections -

1). I feel a roundabout on a high speed road will lead to more accidents. (Yes, I did hear the intention to force a slow down before the interchange, but I drive this road and feel the slow down will cause an increase in rear end crashes. It is normal for people to drive bumper to bumper at speeds up to 75 mph.)

2). The volume of bumper to bumper traffic on Hwy 49 will make it difficult for a safe entry into a roundabout from Florence/Lorenson Roads.

3). Christian Valley Park is a community of over 600 homes. Florence Lane is a designated evacuation road in case of fires or emergencies. A roundabout would create a major bottle neck for hundreds of people trying to evacuate.

4). Property insurance in our area has become difficult to obtain due to potential fires. In all likelihood creating a evacuation bottleneck will make insurance more difficult, if not impossible, to obtain.

5). The majority of my neighbors are retired and elderly. People in Auburn and Grass Valley are not used to roundabouts on major thoroughfares - placing the elderly more at risk from collisions.

6). This section of Hwy 49 is periodically used as a diversion road for Interstate 80. Again increasing the risk of collisions due to thousands of people unfamiliar with the area being forced into using something they're unfamiliar with - a roundabout on a major thoroughfare.

As someone who will be directly effected by your decision. Thank you for allowing me the opportunity to share my opinions.

Sharon Elam
6800 Kenneth Way
Auburn, Ca 95602
530-878-7380

Caltrans Response:

Thank you for your comments. In response:

1. Roundabouts have specific design features that will require drivers to slow down to approximately 25 mph to be able to enter the roundabout. As noted in the presentation, roundabouts provide significant collision and injury reductions versus a two-way stop-controlled intersection. The presentation also presented information on queuing at both the roundabouts and the traffic signal. During the peak hour, the roundabout is expected to have queuing of 200 feet versus 1300 feet for the signalized intersection. The potential for rear ends is a possibility at either feature but should be less for the roundabout because the queuing is significantly shorter.
2. Traffic volumes at both Lone Star and Lorenson are fairly low. There will be gaps in traffic entering the roundabout that will allow traffic from the secondary roads to safely enter with considerably less delay than they currently face.
3. We have a Design Information Bulletin on Evacuation Route Guidance that is being followed as part of the project development process. We are also working with our local agency and emergency response partners to find the best possible intersection treatment that will hopefully meet all party's needs.
4. See Item 3 above.
5. Any intersection treatment requires drivers to approach, enter and pass through in accordance with the rules of the road and the legal requirements. A roundabout provides significant collision and collision severity reduction versus the current configuration and will be safer for all drivers. As with any new highway feature drivers will quickly gain experience to be able to travel safely through the feature.
6. See Item 1 and Item 5.

51	Submission Time	First Name	Last Name	Email	Phone
2021-06-12T20:39:39Z		Paul	Seday	deniseseday@gmail.com	5308788052
Comment: We prefer round abouts to keep traffic flowing and reduced capital and o&m costs. Thank you.					

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

52	Submission Time	First Name	Last Name	Email	Phone
2021-06-14T07:12:00Z		Rick	Davis	rick@terra-firm.com	7076324124
Comment: Please don't do it! If you do anything to 49, add the median barrier and make improvements that will improve the volume of traffic flows through the area. We need to improve flow, not hinder it. How about overpasses and underpasses, on ramps and off ramps? Those seem to serve the rest of the state very well, why not here?					

Caltrans Response:

Interchanges here will have significant cost increases versus the discussed alternative. In addition, the Highway Safety Improvement Program requires incremental safety countermeasures be employed prior to considering a higher cost alternative. Because this concrete median barrier prevents left turn movements onto Highway 49, there is a need identified to address the out of direction travel that the public will have to go to a safe point to make a U-turn movement. Either roundabouts or traffic signals provide the safest option, versus the existing 2 way stop controlled intersections, for public traffic.

53. Awanda Bradley

From: Awanda Bradley
To: PLA 49 Safety Barrier 4H600@DOT
Subject: alternative plan 2
Date: Tuesday, June 15, 2021 12:28:43 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

To
The Committee,

With my experience (34 years) of living off Lonestar Rd I definitely feel the safest left turn intersection off of Lonestar would be with **signal lights. The speed, amount of traffic, and curves on 49** provide too dangerous a left turn from 0 mph from Lonestar on to 49.

The safest plan is **ALTERNATE 2: Barrie and Signaled Intersections**

Resident- daily driver of Lonestar & 49

Awanda Bradley

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

54. Pamella Trocha

From: Pamella Trocha-Powers <ptpowers@gmail.com>
Sent: Wednesday, June 16, 2021 11:21 AM
To: Borrayo, Raquel@DOT <Raquel.Borrayo@dot.ca.gov>
Subject: Highway 49 Auburn, Ca

EXTERNAL EMAIL. Links/attachments may not be safe.

1 You say we need to change hwy 49 yet your actions have caused this.
2 Speed should never have increased to 65. This is a residential road area with no frontage entrance and exit and should have remained 55. From dry creek to Kramer there or over 20 entrances and 4 streets.
3 Your adding sidewalks bike lanes to a highway. DMV says not foot traffic on highways yet all through auburn Thats is happening.
4 There are street lights at Lorenson /florence, Kramer and Lone star.
5 Definately Light intersection verses round abouts.
6 Round about are dangerous at high speeds. They don't slow down to use them. You say these changes are to decrease accident but it will cause accidents. Talking to fire personnel, they say they are dangerous, and lengthen response times. You don't have the right to increase response time to us when we are in a high risk area and will now be a further rise with parking lots access to hidden falls.
7 A center divide with no left turn is wrong. Emergency vehicles need to get to us.
8 This study is from 2017 is so outdated to actual usesage occurring today. Hidden Falls parking access was approved by Placer Co. Planning commission. GPS says to use Kramer Rd. Which you want to now block. There will be 40 horse trailer parking spaces now going to try to use round abouts! With this park expansion emergency access needs to be available.

Here is my proposal.
1 SLOW the speeds to 55 related to so many exits and entrances in this stretch of road.
2 Light intersection at Lorenson and Lone star. NO ROUND ABOUTS.
3 Center divide with opening at Kramer for residents and emergency access. Use the length already marked for waiting and merging center area. Or none at all.
4. You need to acknowledge the people that use it everyday needs first then how to keep it safe for all who just want to speed down the road.

These are my thoughts and many I have talked with,

Pamella Trocha ptpowers@gmail.com. 916 215-1520 please put this in the present record for concerns and complaints. June 16, 2021

Caltrans Response:

1. This project was generated based on cross centerline collisions patterns on this segment of highway. Placement of the concrete median barrier necessitated providing viable and safe turning movements at the Lone Star and Lorenson intersections and as noted, our Project Development Team continues to evaluate which alternative, roundabouts, or traffic signals, is most viable.
2. Per the California Vehicle Code (CVC) 22349 the speed limit on a highway is 65 mph and 55 mph only applies to two lane highways. Per CVC 21651, this segment of SR 49 is a divided highway because it has a median of more than 2 feet and as such it cannot be classified as a two-lane highway. We are not able to reduce the speed limit to 55 mph on this segment. Speed enforcement is under the purview of the California Highway Patrol.
3. Sidewalks and bike paths are only being added at the intersections and this is based on a American's with Disabilities Act requirement for pedestrians. We also need to provide safe route of travel for bicyclists that approach the intersection from the shoulder areas to guide them safely through the intersection.
4. Whichever alternative is selected, lighting will be provided at the intersections.
5. As noted in the presentation a final decision has not been made as to the use of roundabouts or traffic signals for this project. However, please note that roundabouts are a proven safety feature for highway design and the Federal Highway Administration has published a number of technical papers on design and benefits, which have been reviewed by Caltrans in partnership with roundabout experts outside the Department to provide the safest and best design possible. Roundabouts provide a number of benefits related to collision and severity reduction, reduction of greenhouse gases due to not having vehicles idle at a signal, and provide a reduction in traffic speed to be able to enter, transit and depart the roundabout as some examples.
6. The roadway alignment on the approach to the roundabout, including the chicanes, reduced shoulders, and curbs all will require drivers to slow to approximately 25 mph at the entry to the roundabout, if that alternative is selected. We continue to coordinate and jointly evaluate needs with all area emergency services personnel for both emergency response and evacuation, respectively, related to this project.
7. The purpose of this project is to prevent cross centerline collisions and the narrow width of the median section requires installation of a concrete median barrier. As noted above, we continue to evaluate other needs with first responders and are continuing discussions to reduce potential emergency response impacts to the maximum extent practicable.
8. The roundabout is designed to accommodate a 65-foot-long tractor trailer and will therefore allow vehicles with horse trailers to pass through safely. This safety improvement project was generated based on collision data from 2015-2017 and we continue to monitor collisions patterns to this day. There have been additional cross centerline collisions since the project was generated.

55. Ian Boyd – Senior Environmental Scientist, California Department of Fish and Wildlife

Boyd, Ian@Wildlife

To:	hwy49safetybarrier@dot.ca.gov; Sandhu, Sandeep@DOT
Cc:	Wildlife R2 CEQA; Patrick Moeszinger; state.clearinghouse@opr.ca.gov
Subject:	Caltrans 03-4H600 Placer 49 Safety Barrier Project_CDFW Comments on MND (SCH.2021050488)
Attachments:	FYLF Considerations.pdf

Dear Mr. Sandhu:

The California Department of Fish and Wildlife (CDFW) received a Notice of Intent to Adopt a Mitigated Negative Declaration (MND) from the California Department of Transportation (Caltrans) for the Placer 49 Safety Project (Project) (03-4H600) pursuant the California Environmental Quality Act (CEQA) statute and guidelines.

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish, wildlife, native plants, and their habitat. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may need to exercise its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a Responsible Agency under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the project proponent may seek related take authorization as provided by the Fish and Game Code. CDFW also administers the Native Plant Protection Act, Natural Community Conservation Act, and other provisions of the Fish and Game Code that afford protection to California's fish and wildlife resources.

PROJECT DESCRIPTION SUMMARY

The project consists of improving road conditions on State Route (SR) 49 in Placer County from Post Mile (PM) 8.7 and PM 10.6, between the City of Auburn and the City of Grass Valley. The project proposes to construct a concrete median barrier between Lorenson Road/Florence Lane and Lone Star Road to reduce the number and severity of cross median collisions within this segment. Construction of traffic features at Lorensen Road/Florence Lane and Lone Star Road intersections are proposed to accommodate U-turn movements for out-of-direction travel resulting from the construction of the concrete barrier. These features will be in the form of roundabouts, signaled intersections, or restricted crossing U-turns (RCUT) depending on what project alternative is selected.

COMMENTS AND RECOMMENDATIONS

1

CDFW offers the comments and recommendations below to assist Caltrans in adequately identifying and, where appropriate, mitigating the project's significant, or potentially significant, direct, and indirect impacts on fish and wildlife (biological) resources.

Comment 1: Bio-5 Compensatory for Impacts on Wetlands – The MND states that mitigation for impacts to jurisdictional wetlands and other waters of the U.S. and State may be fulfilled by purchasing mitigation credits through the National Fish and Wildlife Foundation's Sacramento District In-Lieu Fee Program. However, CDFW does not accept in-lieu fees as mitigation for impacts to river, stream, or lake habitat subject to notification under Fish and Game Code 1602. CDFW recommends the lead agency propose to purchase credits at a CDFW-approved mitigation bank to mitigate for permanent and temporary impacts to river, stream, or lake habitat. CDFW may also accept other forms of compensatory mitigation, such as stream and wetland creation, restoration or enhancement, and creation or improvement of wildlife crossings in conjunction with the project.

Comment 2: Wildlife Movement – Roadway barriers of all types have the potential to impede wildlife movement for foraging migration, dispersal, and reproduction, and may increase the risk of wildlife-vehicle collisions by confusing wildlife or causing them to be trapped on the road surface while searching for a place to cross (Clevenger and Kociolek, 2006). This segment of SR-49 is identified as a wildlife-vehicle conflict (WVC) hotspot by the Road Ecology Center at UC Davis and a continuous median barrier may increase the likelihood of wildlife-vehicle collisions. Therefore, CDFW is providing the following recommendations: 1) ensure barrier gaps and scuppers are installed at regular intervals in the proposed solid concrete median barrier at appropriate locations to allow for wildlife movement across SR-49; 2) consider installing a metal beam type of median barrier, as opposed to concrete, to allow small mammals and herpetofauna to pass under the median barrier; and 3) improve wildlife movement and WVC by installing fencing along SR-49 to direct wildlife to either the North Fork Dry Creek (Orr Creek) Bridge (Bridge 19-21 at PM 9.45) undercrossing, the existing undercrossing North of Lorenson Road/Florence Lane intersect, and/or install a new undercrossing south of Lone Star Road.

Clevenger and Kociolek state that "effective wildlife fencing and crossing structures can significantly reduce many harmful impacts of roads on wildlife populations." Fencing may be used to exclude animals from portions of roadways where their crossing is not desired and to direct animals toward a desired crossing location; however, fencing that excludes animals from crossing roadways may also cause wildlife to be trapped in the right-of-way (Meese, Shilling, and Quinn, 2009). Thus, CDFW recommends that one-way gates, swing gates, or escape ramps (jump-outs) be incorporated into the fencing design for larger mammals that have the potential to be trapped on the roadway. Additionally, if fencing is installed to direct wildlife, CDFW recommends monitoring the fencing structure and undercrossings with motion-detecting wildlife cameras to measure their effectiveness and ensure the structures meet biological and safety goals.

Comment 3: Foothill yellow-legged frog (*Rana boylii*) (FYLF) – The MND analyzes the potential impacts to FYLF and concludes that there will be no impacts to the species based on the lack of suitable habitat present and no in water work being performed. The MND also identifies the species as a Species of Special Concern and a state listed Candidate Threatened species. On March 20, 2020, the Fish and Game Commission designated the FYLF as either Threatened or Endangered under CESA based on specific clades within California. This project lies within the range of the Northern Sierra clade which is now listed under CESA as Threatened. *Appendix E - Avoidance, Minimization and/or Mitigation Summary*, includes a measure to conduct amphibian surveys within 7 days of ground-breaking activities. CDFW recommends Caltrans review the habitat assessment, survey methods, and avoidance and minimization measures in the Considerations for Conserving the Foothill Yellow-Legged Frog document prepared by CDFW; available at https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=157562&inline and attached to this email. The recommendations in the CDFW document should be used to develop measures in the MND for conducting surveys and avoidance if FYLF are detected during the surveys or at anytime during the project. These measures should include how the lead agency will completely avoid discovered FYLF or come into compliance with CESA.

Comment 4: Habitat Conservation Plans – The project is directly adjacent to the planning area of the Placer County Community Conservation Plan (PCCP) and may be within a portion of the planning area boundary. Because the PCCP is currently being implemented, CDFW recommends that the MND include a discussion on the consistency of the project alternatives 1, 2, and 3 with the PCCP and how Caltrans will ensure that implementation of the project alternatives do

not impede the PCCP's ability to meet its biological goals and objectives. Furthermore, CDFW recommends that Caltrans coordinate with the implementing agency/plan operator (Placer County) of the PCCP to ensure substantial adverse effects assessed in the MND are adequately analyzed. Particular focus in the MND's analysis should be directed to:

- Analysis of all PCCP Covered Species,
- Assessment of habitat types identified in the PCCP,
- Identification of applicable PCCP avoidance, minimization, or mitigation measures; and,
- Analysis of any impacts to land commitments of the PCCP.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special-status species and natural communities detected during Project surveys to the CNDDB. The CNNDB field survey form can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data. The completed form can be submitted online or mailed electronically to CNDDB at the following email address: CNDDB@wildlife.ca.gov.

FILING FEES

The project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

CONCLUSION

Pursuant to Public Resources Code §21092 and §21092.2, CDFW requests written notification of proposed actions and pending decisions regarding the proposed project. Written notifications shall be directed to: California Department of Fish and Wildlife North Central Region, 1701 Nimbus Road, Rancho Cordova, CA 95670 or emailed to r2CEQA@wildlife.ca.gov.

CDFW appreciates the opportunity to comment on the MND to assist in identifying and mitigating project impacts on biological resources. CDFW personnel are available for consultation regarding biological resources and strategies to minimize and/or mitigate impacts. Questions regarding this letter or further coordination should be directed to Ian Boyd, Senior Environmental Scientist (Specialist), at (916) 932-3035 or ian.boyd@wildlife.ca.gov.

LITERATURE CITED

Clevenger, A.P. and A.V. Kociolek. 2006. *Highway median impacts on wildlife movement and mortality: State of the practice survey and gap analysis.* Prepared for California Department of Transportation, Sacramento, California.

Meese, Robert J., Fraser M. Shilling, and James F. Quinn. 2009. *Wildlife Crossings Guidance Manual, Version 1.1.* Prepared for California Department of Transportation, Davis, California.

UC Davis Road Ecology Center. "Real-time Deer Incidents & Wildlife-Vehicle Conflict (WVC) Hotspots." https://roadecology.ucdavis.edu/hotspots/map. Accessed June 7, 2021.

Thank you,

Ian Boyd
Senior Environmental Scientist (Specialist)
North Central Region (Region 2)

1701 Nimbus Rd., Suite A
Rancho Cordova, CA 95670
P: 916-932-3035
ian.boyd@wildlife.ca.gov

CALIFORNIA DEPARTMENT OF
FISH and WILDLIFE

Attachment 1:

This document was prepared by the California Department of Fish and Wildlife (CDFW) for CDFW Staff. Information was compiled by:
Michael van Hattem, Northern Region
Margaret Mantor, Habitat Conservation Planning Branch

Contents

Cover photo credit: Alessandro Catenazzi
Document photo credits: Mike van Hattem, JoAnn Loehr, Jamie Bettaso, Wes Stokes, and Richard Macedo

The California Department of Fish and Wildlife (CDFW) developed this document to provide a review of the ecology of the foothill yellow-legged frog (Rana boylii) as well as considerations for avoiding or minimizing project-related impacts to the species. This document should not be interpreted as an order or mandatory standard for environmental review or permitting. The scientific information provided herein is intended to assist CDFW staff, project proponents, and consultants in conserving the species. While this document provides considerations and examples for avoiding or minimizing project-related impacts, practical applications must be based on the best available information and project- and site-specific conditions.

Introduction

CDFW staff, project proponents, and consultants routinely plan and implement projects that may affect stream breeding amphibians such as the foothill yellow-legged frog. Projects including seasonal bridge installation, bridge and culvert replacements, or dam removal can take days or years to complete and have temporary and/or permanent impacts within stream reaches. A season of operation that completely avoids foothill yellow-legged frog presence does not exist. If frogs are present and breeding, they may be encountered in various life-stages year round. Therefore, understanding the ecology and spatial distribution of the foothill yellow-legged frog is critical to implementing a project that minimizes impacts to the species, while achieving the desired outcome of the project in an efficient and cost effective manner[1]. The appendices provide examples of documented atypical behavior as well as examples of measures and practices that may help minimize impacts to foothill yellow-legged frogs.

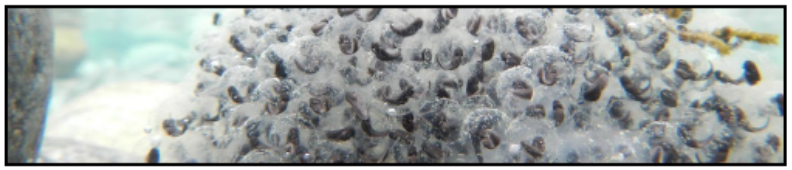
Conservation Status

In December 2016, the Center for Biological Diversity submitted a petition to the California Fish and Game Commission (Commission) to list the foothill yellow-legged frog as threatened pursuant to the California Endangered Species Act (CESA; Fish & G. Code, § 2080 et seq.). The Commission followed CDFW's recommendation and voted to advance the species to candidacy on June 21, 2017, publishing its related findings on July 7, 2017 (Cal. Reg. Notice Register 2017, No. 27-Z, p. 986). During CESA candidacy, a species is afforded protections as a listed species and "take[2]" is prohibited

[1] It is the policy of the state of California and the intent of the California Endangered Species Act legislation that "reasonable and prudent alternatives shall be developed by the department, together with the project proponent and the state lead agency, consistent with conserving the species, while at the same time maintaining the project purpose to the greatest extent possible" (Fish & G. Code, § 2053).
[2] Pursuant to Fish and Game code section 86, ""take"" means hunt, pursue, catch, capture, or kill or attempt to hunt, pursue, catch, capture, or kill."

unless authorized by CDFW pursuant to Fish and Game Code section 2080.1, 2081, subdivision (a) or (b), 2089.6, or 2835, or by the Commission pursuant to Fish and Game Code section 2084.

As of July 7, 2017, projects within foothill yellow-legged frog habitat may need authorization for take if take cannot be avoided. Such authorization could take the form of an incidental take permit (ITP; Fish & G. Code § 2081, subd. (b); Cal. Code Regs., tit. 14, §§ 783.2-783.8), a consistency determination if federal incidental take has been authorized (CD; Fish & G. Code, § 2080.1), a safe harbor agreement (SHA; *Id.*, § 2089.6), or a natural community conservation plan (NCCP; *Id.*, § 2835). Take authorization issued pursuant to CESA requires project- and species-specific avoidance and minimization measures, as well as full mitigation for project related impacts.



Basic Ecology

Non-Breeding Habitat: Fall/winter refugia are generally characterized by small tributary streams with perennial water where frogs can forage and avoid mortality caused by flooding (Bourque 2008; Gonsolin 2010; Kupferberg 1996). Non-breeding habitat also includes adjacent terrestrial riparian habitat. Springs, seeps, pools or other moist habitats such as woody debris, root wads, undercut banks, clumps of sedges, and large boulders occurring at high water-lines adjacent to pools may serve as refugia during periods of high stream flow in winter (Rombough 2006; Van Wagner 1996). Wheeler and Welsh (2008) observed adult frogs in breeding and non-breeding habitats regardless of season, providing evidence of a dispersed distribution during both seasons. Overwintering is the least understood aspect of foothill yellow-legged frog habitat use (Hayes et al. 2016).

Breeding Habitat: Adult frogs congregate at suitable breeding habitat and females select oviposition sites. Breeding and rearing habitat is generally characterized by wider, more sunlit mainstem channels. Breeding sites are generally, but not always, located in low-gradient edge water often at point bars or depositional areas near tail-ends of pools and runs (Kupferberg 1996; Wheeler and Welsh 2008). Kupferberg (1996) found successful frogs selected historically used breeding sites associated with tributary confluences, with distinctive channel morphologies, and with boulders that created microhabitats with below-ambient flow velocity. Breeding sites with greater than average width-to-depth

ratios had above-average survival (Ibid.). Thalwegs are rarely suitable for breeding due to greater depths and higher velocities.

Movement: Adult frogs congregate at breeding sites during the reproductive season and then disperse following reproductive activity. Seasonal movements occur among breeding, post breeding summer, and overwintering habitats. Movement data on foothill yellow-legged frogs is limited to a few studies at this time; it is likely that frogs are more mobile than commonly believed and likely utilize a wide range of watershed features including different order tributaries. One study in Tehama County found frogs rarely go beyond 12 m from the channel during any time of the year (Bourque 2008). However, during the same study, Bourque observed a female move up a dry tributary and over a ridge to an adjacent watershed, a distance of over 7 km from her original location, although much of this was in wetted channels. And Nussbaum et al. (1983) reported finding frogs 50 m away from water under debris. Cook (2012) described frequent observations of foothill yellow-legged frogs far (16 m to 331 m, average distance of 71.3 m) from natal streams and in urban settings, near Ukiah, Mendocino County. Instream travel rates vary from tens to hundreds of meters per day, with the longest recorded distance being 1,386 m per day (Thomson et al. 2016).

Foothill yellow-legged frog upland habitat use and movement are poorly understood. However, anecdotal observations suggest that foothill yellow-legged frogs utilize upland habitat in relative proximity to streams, at least in more mesic parts of California (see Appendix A). Seasonality also likely plays a key role as explained throughout this document.

Breeding Season: Foothill yellow-legged frog breeding is correlated with the seasonal timing of streamflow and increasing air and water temperature. Generally, breeding occurs in the spring after winter runoff has subsided. Timing of breeding is variable and may depend on:

- Latitude - Southern populations breed earlier than northern populations (Zweifel 1955).
- Water and/or air temperature - Breeding may start as early as May in warm coastal locations and as late as July in snowmelt-dominated watersheds.
- Rainfall/discharge - Breeding may occur earlier and during a shorter time period during drought years compared to years with rainy oviposition periods (Kupferberg 1996). Frogs initiate breeding to coincide with warmer temperatures and cessation of winter rains (Ibid.). Frogs commence ovipositioning later when base flow is high, and earlier in low-flow years. This plasticity may be driven by temperature cues as well as by precipitation (Ibid.).

Predicting breeding season variability is important for effective avoidance and project-related mitigation. As a rule-of-thumb, in coastal (rain-fed) systems, breeding occurs between May to mid-June. In Sierra Nevada and Klamath-Siskiyou (snowmelt-fed) systems, breeding occurs between late April to early July[3] (generally May to early June).

Duration of breeding varies by population with some breeding intervals as short as two weeks (Storer 1925; Zweifel 1955), others lasting up to 31 days (Van Wagner 1996). Breeding is more protracted during cold, rainy springs than warm, dry ones (Kupferberg 1996; Wheeler and Welsh 2008). In addition, male frogs may remain near the breeding area for months after breeding activity ends (Wheeler et al 2006).

Oviposition, Tadpoles, and Subadults (Metamorphs): Eggs occur in a mass, attached to cobble, boulder, bedrock and occasionally wood and vegetative substrates[4] in the shallow, slow moving (i.e., <5 cm/sec) portions of the stream. See Hayes et al. 2016, Table 1 for an overview in variation in physical conditions (elevation, water temperature, depth, and velocity) at oviposition. Approximately 10ºC may be the minimum temperature required for oviposition (See Hayes et al. 2016, Table 1). Rates of embryonic development (5 to 30+ days) are highly temperature-dependent (Zweifel 1955). Length of the tadpole period is 3-4 months (Zweifel 1955) and varies in relation to both temperature and the quantity and quality of algal food (Catenazzi and Kupferberg 2013; Kupferberg et al. 2011), with cooler water temperatures lengthening the time to metamorphosis. Successful tadpoles select temperatures between 16.5ºC and 22.2ºC (Catenazzi and Kupferberg 2013). Tadpole rearing sites require some degree of protection from unpredictable scouring flows. Lower water velocity and shallower water depth habitats are more suitable for tadpole rearing sites (Bondi et al. 2013). However, shallower sites are more vulnerable to stranding and desiccation.

For an expanded discussion of foothill yellow-legged frog life history, see:

Thomson, R. C., A. N. Wright and H. B. Shaffer. 2016. California Amphibian and Reptile Species of Special Concern. 390 pp. University of California Press.

[3] Breeding on the Stanislaus River below New Melones Reservoir can occur as late as July, likely owing to the relatively low temperature of water released (Hayes et al. 2016).

[4] Foothill yellow-legged frog egg masses were documented laid on sedges, woody debris, and other vegetation from 2007 to 2016 within the Pit 4 Reach of the Pit River, Shasta County (PG&E 2017). The Federal Energy Regulatory Commission issued a license to Pacific Gas and Electric Company during this time period which increased the minimum instream flow releases. Discharge and water depth increased and consequently, suitable breeding habitat was pushed into the riparian zone, where frogs used live vegetation and woody debris as attachment substrate. See Appendix B for photos.

Hayes, M.P., C.A. Wheeler, A.J. Lind, G.A. Green and D.C. Macfarlane (Technical Coordinators). 2016. Foothill Yellow-Legged Frog Conservation Assessment in California. Gen. Tech. Rep. PSW-GTR-248. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 193 p. https://www.fs.fed.us/psw/publications/documents/psw_gtr248/psw_gtr248.pdf



Avoidance Considerations

Generally, some projects may be strategically planned and implemented to avoid take of listed or candidate species. Although such projects might not require take authorization, these projects may require other environmental permits (e.g., Lake or Streambed Alteration Agreement; Fish & G. Code, § 1600 et seq.). Project proponents may seek to consult with CDFW to determine appropriate measures that could be implemented for purposes of avoiding take. If take could still occur, authorization for incidental take such as an ITP, CD, SHA, or NCCP are options to discuss with CDFW. The following considerations may be useful when determining whether a project could avoid take of foothill yellow-legged frogs.

Assessing Habitat and Evaluating Presence

Habitat assessments are conducted to evaluate the likelihood that a site supports foothill yellow-legged frogs. Foothill yellow-legged frogs have a wide geographic range in California. The species is strongly associated with shallow, low-gradient channels with riffles that have unconsolidated coarse substrates (see Hayes et al. 2016 for a recent literature review on this topic)[5]. They occupy habitat ranging from sea level to

[5] However, the range of aquatic habitat in which foothill yellow-legged frog have been found in is diverse; frogs have been observed in permanent and intermittent streams with low to relatively high gradients, alluvial and bedrock channels (Leidy et al. 2009), stream-associated backwaters and isolated pools (Hayes and Jennings 1988), and slow-moving rivers with mud-substrates (Fitch 1938).

approximately 5,800 feet[6]. Suitable habitat may be seasonal refugia (non-breeding habitat), breeding and rearing sites, or movement corridors.

Project proponents and CDFW staff should consult the California Natural Diversity Database (https://www.wildlife.ca.gov/Data/CNDDB) or other similar sources for any observations of foothill yellow-legged frog within or adjacent to the project site. Note that an absence of observations does not rule out presence and CDFW recommends that a trained and experienced biologist conduct additional follow-up surveys.

Surveys

Surveys provide information needed to determine potential effects of proposed projects and activities on foothill yellow-legged frogs, and to avoid or minimize take of frogs. Project site surveys are the best method for assessing whether foothill yellow-legged frogs are present where suitable habitat is present (see Basic Ecology above). There is no standard protocol for surveying foothill yellow-legged frog, and the survey method selected may vary depending on time of year and the intended life-stage. Timing of surveys may vary depending on watershed location and characteristics, regional snow pack, timing and rate of spring runoff, day length, average ambient air and water temperatures, and local and seasonal weather conditions. Current scientific literature suggests surveys for presence will be most accurate if conducted during and immediately following the breeding season (spring-summer). Recommended visual encounter survey (VES) methods are described below.

VES conducted during the late summer are often the easiest method for determining presence; subadults and occasionally adults are often observed along river margins, and subadult and adult frogs will likely also be observed in tributary streams (Crump and Scott 1994). This survey period has a high probability of detecting foothill yellow-legged frogs. To increase the likelihood of detection, two or more surveys are recommended, one including a tadpole survey in the late spring/early summer followed by a second survey for subadults and adults in the late summer. It is important to understand that frogs are ectothermic, so ambient temperature affects the likelihood of detection. Whether the life form is larval or subadult, both stages will shelter in place under substrate and emerge and become active with warmth (i.e., detection probability increases with temperature). If a survey fails to detect foothill yellow-legged frogs within suitable habitat, a follow-up survey should be conducted two to four weeks after the initial survey.

[6] There is one record from 6,400 feet (Hemphill 1952).

Peek et al. (2017) provide a useful VES protocol. Seltenrich and Pool (2002) recommend conducing one or two surveys for adult frogs followed by a tadpole survey, then a second survey for juveniles/subadults:

- Conduct one or two adult frog VES during the breeding and/or oviposition period (generally, April-June). VES during the spring breeding period usually provide the best opportunities for observing adults and egg masses, but timing can be difficult as many adults do not remain for extended periods at breeding locations.
- Conduct a tadpole survey four to eight weeks after completing breeding survey(s) (usually from June through early August).
- Conduct a subadult survey during the latter part of the summer or during early autumn (generally late August to early October).

While surveys conducted during and immediately following the breeding season are considered most effective, surveys may fail to detect existent foothill yellow-legged frogs; some project proponents may choose to assume presence and rely on habitat as an indicator of presence in lieu of, or in addition to, surveys.

Evaluating Avoidance Methods

Measures to avoid incidental take must be developed on a site- and project-specific basis. For example, measures may vary based on the type and extent of disturbance, duration and timing of disturbance, and influence of environmental factors. The following measures and those in Appendix C are intended to illustrate how a project proponent may avoid incidental take. CDFW does not recommend using these measures as a de facto standard or employing them without a habitat assessment and field-surveys.

A season of operation that completely avoids foothill yellow-legged frog presence does not exist; if frogs are present and breeding, they may be encountered in various life-stages year round. However, in locations having periodic dry conditions, especially prolonged dry conditions, foothill yellow-legged frogs are unlikely to be encountered. Under dry conditions, foothill yellow-legged frogs seek refuge in wetted tributaries (or any wetted feature), and cooler riparian habitat, and may be capable of aestivation, although this adaptation is not described in the literature. Any form of surface water will likely attract foothill yellow-legged frogs.

Conducting site inspections prior to conducting work may allow project proponents to avoid incidental take. If frogs in any life stage are found during inspections, work should be suspended, and the project proponent should notify CDFW for the purpose of developing coordinated conservation measures prior to recommencing work. For example:

- Within 3-5 days prior to entering or working near stream/riparian habitat within the foothill yellow-legged frog range, CDFW recommends a biologist survey the project site for foothill yellow-legged frogs (adults, subadults, tadpoles or egg masses) within the project area and at least 500 feet upstream and downstream. If the project activities are expected to result in effects extending beyond 500 feet downstream (e.g., heavy sedimentation that could bury egg masses or tadpole rearing sites), CDFW recommends the survey area be expanded to encompass the expected affected area.
- If surface water is present during the work period, CDFW recommends a biologist inspect the work area daily, before work begins and during construction.

Prior to beginning construction where equipment or materials may come in contact with water, gravel bars, riparian areas, or any other foothill yellow-legged frog habitats, CDFW recommends a biologist educate personnel, explaining site-specific protective measures to equipment operators and construction personnel. This should include species identification, life history descriptions, habitat requirements during various life stages, and the species' protected status. Education should include clear instructions that if any workers encounter a foothill yellow-legged frog within or near the project site, work should halt and the biologist and project proponent should be informed.

Minimization Considerations

The following considerations and measures may help minimize impacts to foothill yellow-legged frogs.

Seasonal Restrictions:

Restricting work within the stream and riparian habitat to periods outside of the breeding season may reduce impacts to individual foothill yellow-legged frogs. As previously noted, a season of operation that completely avoids foothill yellow-legged frog presence does not exist in habitats that maintain perennial surface water.

Excluding Frogs From the Project Area:

Other ranid frogs, such as California red-legged frogs (*R. draytonii*) have strong breeding site fidelity and are capable of climbing (Rathbun et al. 1997, Semonsen 2017). Recent observations by a species expert suggest that sub-adult foothill-yellow-legged frogs can climb wetted-vertical concrete walls (J. Wilcox, Managing Ecologist at Sonoma Mountain Ranch Preservation Foundation. Personal communication, 12/18/2017).

The effect of excluding frogs from their historical breeding sites is unknown. Exclusion fencing is expected to be an effective technique provided it is properly installed; both trenched in and vertically stout, and regularly maintained. Another species expert suggests exclusion fencing should be at least three feet high and the top few inches should be folded over to curtail climbing frogs (J. Alvarez, Wildlife Biologist. Personal communication, 12/14/2017). This approach was also reported by Semonsen (2017) who proposed a simple fix for climbing by folding over the top few inches of wire (with silt fence) away from the construction area. The proposed design would allow frogs to climb up and out of the impact zone but would prevent them from climbing in (Ibid.).

When exclusion is required in flowing water, exclusion fencing should be installed up- and downstream of the work area. The fence should consist of ¼-inch mesh or smaller opening material, preferably consisting of wire, or alternatively fabric netting if capable of withstanding flow. Fencing must be sufficiently anchored to the streambed to prevent immigration of frogs and tadpoles.

Examples of products that have been used for excluding wildlife from construction sites include:

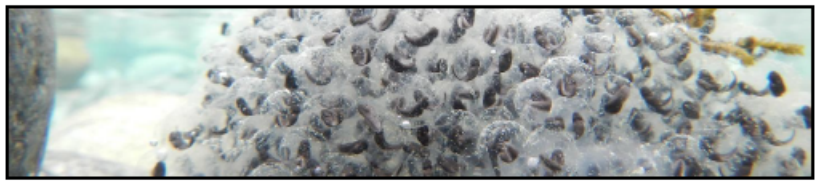
- https://animexfencing.com/
- http://ertecsystems.com/Applications/Wildlife-Exclusion-Fence---Special-Status-Species-Protection

Relocating Adults and Eggs Outside of the Project Area:

The following measures may minimize direct mortality of individual frogs or egg masses; however, they would only be authorized through an ITP, SHA or NCCP. When CDFW consults with project proponents, the primary approach is to identify measures designed to ***avoid*** impacts, both to individuals and habitat. This is particularly important when it comes to breeding habitat and more specifically oviposition sites. Foothill yellow-legged frogs select specific abiotic features within the stream channel such as instream morphology, depth, velocity, and thermal exposure, among others. Oviposition sites are very important and should be avoided when possible. If avoidance is not possible and surveys confirm egg masses occur in high numbers (e.g., more than 100 egg masses/km), then oviposition sites may be less genetically significant and egg mass relocation may be a feasible option to minimize take of individuals[7].

In main stem rivers such as those on the north coast where foothill yellow-legged frogs appear to be relatively abundant, the most effective method for reducing individual mortality may be to relocate egg masses, rather than relocating subsequent larvae or subadult frogs from a project area. Foothill yellow-legged frogs lay a single clutch or egg mass of 200-300 eggs on average, but egg masses can contain up to 3,000 eggs (Kupferberg et al. 2009). Egg masses are relatively conspicuous to an experienced surveyor and egg masses are relatively persistent, lasting for about 2-3 weeks prior to hatching and larvae emergence, although this is variable and based on water temperature (Zweifel 1955). Egg masses are usually attached to the leeward side of cobble, bedrock, and occasionally wood (see Appendix B for atypical substrate examples). Egg mass relocation requires planning and adequate site surveys both in and beyond the project area. Egg mass relocation should not be a last minute exercise. The following methods are based on CDFW biologist experience.

[7] Avoidance should be tied to extinction risk at the population level; if foothill yellow-legged frogs and oviposition sites are rare in a given stream based on surveys, then the level of avoidance should be designed to preserve as many egg masses as possible. Minimizing take of individuals by relocating egg masses may not be advisable in such cases and measures should be developed to fully avoid take of egg masses (e.g., limiting in-stream work to outside of the breeding season).



Egg Relocation Methods:

Identifying receiving habitat for relocated eggs. In order to identify suitable receiving habitat (i.e., breeding patch) for egg masses relocated from the project site, CDFW recommends conducting one or more VES along the margins of the stream both upstream and downstream of the project area in the spring prior to project initiation. For large-scale projects, completing the VES a year prior to construction can aid in planning and logistics and may be critical to minimizing impacts to foothill yellow-legged frogs. If the project area is large and/or linear, or breeding patches are scarce, it may be necessary to survey greater than a kilometer each way to locate enough receiving habitat. During a VES, observers walk and/or wade along the margins of the stream visually inspecting and noting the location of all suitable habitat for egg masses. A VES is most effective as well as safer for the surveyors when done in tandem with each surveyor covering opposite sides of the stream.

Moving egg masses. It is critical to identify the onset of breeding because egg masses mature and hatch quickly (approximately 2-3 weeks). If the project proponent elects to move egg masses to minimize impacts, CDFW recommends conducting visual encounter surveys for egg masses within the project area every 7-10 days for the duration of the breeding season. When an egg mass is observed within the project area, the biologist should gently place the egg mass and its rock into a bucket with fresh stream water and immediately transport the eggs upstream (upstream initially and downstream if needed) above the affected reach to the previously identified receiving habitat. Two or three egg masses, depending on rock size, will fit in one bucket. Egg masses should be submerged at all times. Aeration is not required, assuming bucket retention time is brief. Within the receiving habitat, the biologist will gently place the egg mass and its rock in appropriate depth and velocity edge water. Other egg masses will likely already be present in the receiving habitat so it is important to note their location and avoid disturbing them during relocation procedures. If any egg masses become detached from their cobble, they should be enclosed with cobble in the sheltered low-flow receiving habitat.

It is good practice to collect a GPS waypoint for each egg mass and also the age of the egg mass based on embryonic development (i.e., Gosner Stage). Gosner stage is

useful life history data and can assist with determining breeding phenology in a given stream segment.

Larvae Relocation Considerations:

Newly hatched larvae are immobile and spend several days grazing on egg mass accumulated algae/diatoms before they begin to move away from the egg mass remnants. Larvae are most susceptible to desiccation or project related impacts at this life phase as they are incapable of any substantial movement. As larvae mature, they become stronger swimmers but even then, they tend to travel short distances with bursts of speed only to seek cover among interstitial spaces in stream substrate or in algal cover. Due to this behavioral trait, relocating larvae is difficult. If the project can be delayed, relocating post-metamorphic frogs may be easier and more feasible than relocating larvae. Larvae are more fragile than post-metamorphic frogs.

If larval foothill yellow-legged frogs must be moved to avoid direct mortality, the methodology is for surveyors to move upstream with small aquarium nets and buckets, covering the wetted channel equidistance from each other. Larvae may flush but they may also hide under or between substrate, depending on temperature, time of the day, etc., so "rubble rousing" and algae displacement can be important. Larvae are likely to be concentrated in and around former oviposition sites, so edge habitat is most likely occupied; the thalweg or deeper areas are less likely to be occupied by larvae. Several passes will be required, and captures should decrease with each pass. Block netting the upper and lower portions of the impact area may be important to reduce recruitment of individuals into the area being cleared.

Water Diversion Considerations:

Streams and rivers are used as a water source for many activities, including but not limited to, domestic water supply, timber harvesting operations, cannabis cultivation, wildfire suppression, and revegetation projects. Diverted water may be used immediately or stored and may be used in combination with additives such as fertilizers or dust palliatives for unpaved roads. Some of these additives may have direct or indirect impacts to frogs and other aquatic species.

The following are best management practices for minimizing impacts of water diversion on foothill yellow-legged frogs. For low-volume water diversion projects, water intake screening and water diversion rate should be assessed regarding potential impacts to foothill yellow-legged frogs. High-volume water diversion projects may require project-specific consultation with CDFW engineering staff[8].

Intake screening. To minimize entrainment of foothill yellow-legged frog larvae during water diversion, all pump intakes should be fitted with a screen-type device consisting of, at minimum, a water intake strainer. Water intake strainers are most appropriate for low-volume diversion projects. For high-volume water diversion projects or other diversion activities that may warrant greater protection, pump intakes should be fitted with screens made of woven mesh, perforated plate, or wedge wire. The screen medium must be able to withstand forces related to pumping and be of sufficient size to prevent foothill yellow-legged frog larvae from entering the intake and being pumped along with diverted water. As mentioned previously, high-volume water diversion projects may require project-specific consultation with CDFW engineering staff.

For water diversions involving water trucks, operators should move drafting hoses with attached screens in and out of the water after each drafting operation. The screen should be brushed clean and inspected each time it is placed into the water. This practice will usually prevent screens from accumulating significant amounts of debris and essentially replicate the function of a self-cleaning screen. Where a stationary pump is used, the screen should be checked frequently to ensure it is kept clean and free of debris.

Diversion rate. Water diversion rates may cause adverse impacts to foothill yellow-legged frogs if the flow in source streams is reduced to levels insufficient to support eggs, tadpoles, and subadults. For these cases, a site-specific water diversion plan and measures such as these may minimize impacts in smaller streams:

- For small streams, maintain flow in the source stream during water diversion at a minimum rate of 2.0 feet^3/second or greater
- If diverting from a pool, do not reduce pool volume by more than 10 percent
- Do not exceed a diversion rate of 10 percent of the surface flow from the source stream

[8] CDFW developed fish screen criteria to protect fry-sized salmonids from water diversion activities. Those screen criteria will likely protect foothill yellow-legged frogs. See the California Salmonid Stream Habitat Restoration Manual, Appendix S for more details.

- Do not exceed an instantaneous diversion rate of 350 gallons per minute (0.78 feet^3/second)

Water storage facility. Diverted water may be stored in artificially constructed water storage facilities. These include off-stream reservoirs, bladders, and tanks. All water storage facilities, including secondary containment structures, should be regularly inspected for leaks and to ensure integrity; repairs should be made immediately. To prevent rupture or overflow and runoff, water storage facilities should be equipped with a float valve, or equivalent device, to shut off diversion when storage facilities are full. The following design criteria may minimize impacts to foothill yellow-legged frogs:

Reservoirs

- Designed by a licensed professional.
- Designed so that reservoir may be routinely drawn down and left in a dry state for an extended period.
- No hydrologic connectivity to upstream surface waters (i.e., not located on-stream).
- Overflow outlet designed and located to prevent erosion in case of overtopping.
- Constructed and operated in a manner that enables wildlife to exit the waterbody.

Bladders

- Include a secondary containment structure that will contain 110 percent of water volume in case of bladder failure, and that will enable wildlife to escape the structure.
- Designed and properly installed to store water and sited to minimize the potential for water to flow into a watercourse in the event of a catastrophic failure.
- Not encouraged for long-term use.

Tanks

- Enclosed (no open top).
- Made of rigid material, such as metal or high-density polyethylene, designed to hold water.
- Installed according to manufacturer's specifications and placed on properly compacted soil that is free of rocks and sharp objects, capable of bearing the weight of the tank and its maximum contents with minimal settlement.
- Piping includes backflow prevention devices to minimize backflow and cross contamination, for example, from tanks used to mix chemicals.
- Located outside of any stream channel or riparian vegetation.

APPENDIX A. Upland Movement Examples

The following images depict upland observations made by M. van Hattem in Humboldt County of foothill yellow-legged frog movement. The actual path traveled is unknown; the red line in each image depicts the shortest distance from the location where the frog was found to the stream course. Elevation change along that distance is included for each image.

In both Mad River examples, no stream connection existed with the location where the frogs were found, demonstrating both summer and winter overland movement. In two of three examples, the frog's location was adjacent to a large wetland complex. These observations suggest that foothill yellow-legged frogs, especially subadults, will move overland and movement may not be directly tied to a stream course.

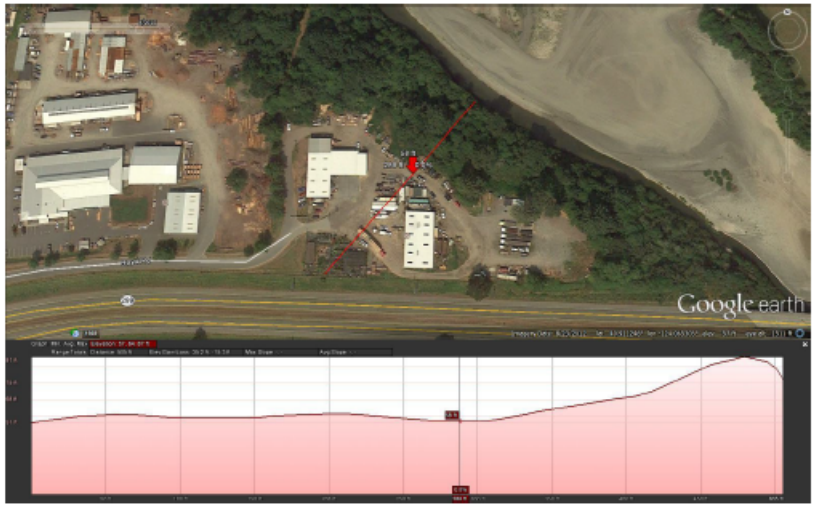


Figure 1. Six adult foothill yellow-legged frogs were observed, August 2011, utilizing decorative nursery ponds during the summer months, post breeding, on the lower Mad River, approximately four miles from the Pacific Ocean. The ponds were approximately 500 feet from the wetted channel. To reach the ponds from the river, the frogs had to cross a developed retail zone adjacent to a highway.

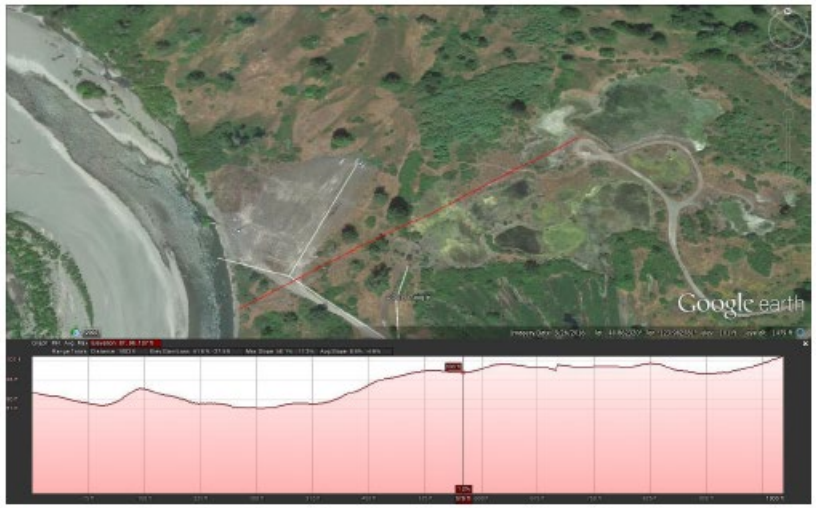


Figure 2. A single subadult foothill yellow-legged frog was observed with two northern pacific treefrogs (*Pseudacris regilla*) under a piece of bark refugia approximately 1,000 feet from the wetted edge of the Mad River, and approximately 9 miles from the Pacific Ocean. The frogs were observed January 12, 2017, during cold temperatures and all three frogs were sluggish. The location was on a high floodplain adjacent to an old gravel mine and resulting pond.

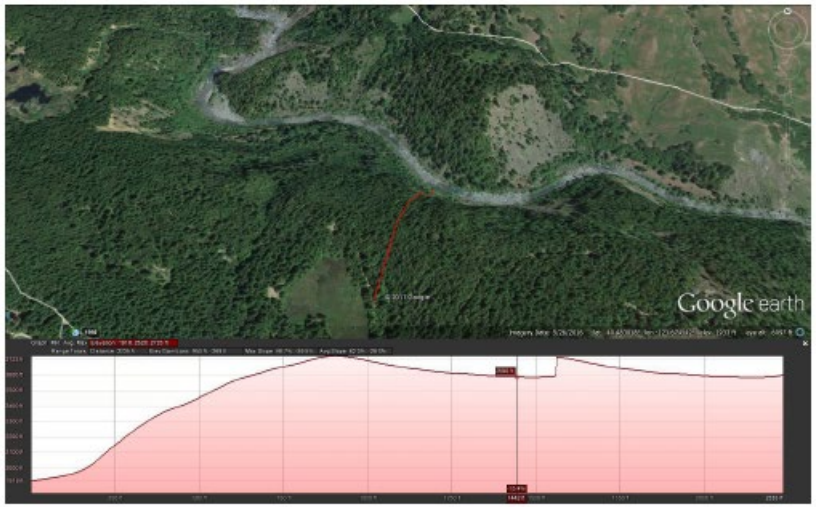


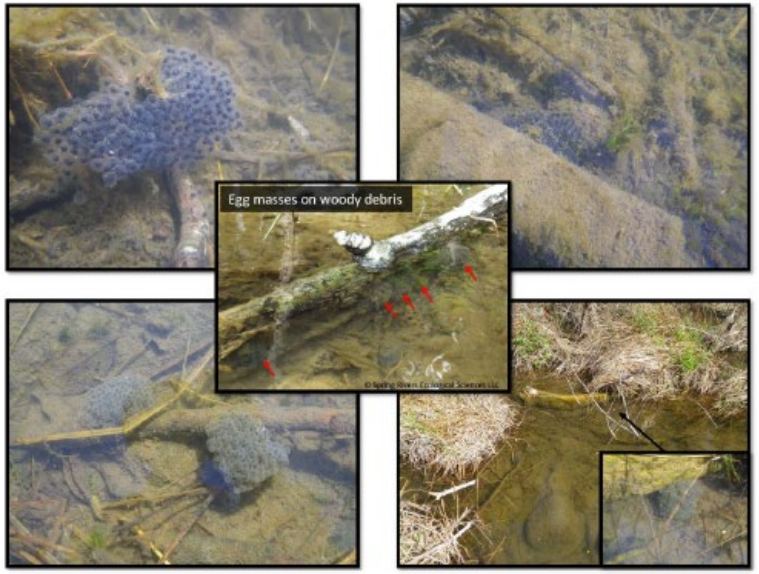
Figure 3. A subadult foothill yellow-legged frog was observed 2,723 feet (with approximately 1,000 foot elevation gain) away from the wetted edge of the Van Duzen River, and approximately 35 miles from the Pacific Ocean. The frog's location was adjacent to a large wetland complex (11/17/2015).

APPENDIX B. Egg Masses on Woody and Vegetative Substrates Examples

Foothill yellow-legged frog egg masses were documented laid on atypical substrates such as sedges, woody debris, and other vegetation from 2007-2016 within the Pit 4 Reach of the Pit River, Shasta County (PG&E 2017). The Federal Energy Regulatory Commission issued a license to Pacific Gas and Electric Company during this timer period which increased the minimum instream flow releases. Discharge and water depth increased and consequently, suitable breeding habitat was pushed into the riparian zone, where frogs used live vegetation and woody debris as attachment substrate. The following photos are copyright of Koen G. H. Breedveld of Spring Rivers Ecological Sciences, LLC. Used with permission.


Egg mass on willow stem
Egg masses on willow stem and roots
Egg masses on sedges and alder/willow roots

19


Egg masses on woody debris

20

APPENDIX C. Example Avoidance and Minimization Measures

The following are examples of foothill yellow-legged frog avoidance and minimization measures prescribed in past CESA ITPs and Lake and Streambed Alteration Agreements issued for construction and restoration projects, with additional measures recommended in the scientific literature. This appendix only restates past mitigation approaches and should not be interpreted as having any determinative or binding effect on future mitigation recommendations or requirements by CDFW. These measures may be used and adapted or modified based on site- and project-specific conditions.

Habitat Assessment and Delineation:

Prior to initiating Covered Activities, the Biologist shall conduct and submit to CDFW a habitat assessment to determine the likelihood (low, moderate, or high) of foothill yellow-legged frog occurring within and adjacent to the Project Area. The habitat assessment shall consider historical and existing land uses of the Project Area, presence of invasive species, proximity to known or potential instream foothill yellow-legged frog breeding sites, existing quality of riparian habitat, proximity to tributaries, barrier(s) to foothill yellow-legged frog movement between suitable riparian/upland and/or aquatic habitat and the Project Area, and other conditions pertinent to foothill yellow-legged frog presence.

Pre-Construction Survey Plan:

Permittee shall develop a Pre-Construction Survey Plan for foothill yellow-legged frog and submit it to CDFW for approval prior to ground-disturbing activities. The Plan shall include what life-stage(s) shall be surveyed for, survey method(s), and timing of survey(s). The Plan shall provide justification for timing and methodology of survey design (e.g., watershed characteristics, regional snow pack, timing and rate of spring runoff, day length, average ambient air and water temperatures, local and seasonal conditions). For sites with suitable breeding habitat, two consecutive seasons of negative egg mass/larval surveys are recommended to support a negative finding.

Pre-Construction Surveys:

Within 3-5 days prior to entering or working at the Project Site, the Biologist shall perform a pre-construction survey, as specified in the Pre-Construction Survey Plan, within the boundaries of the Project Area plus a 500-foot buffer zone upstream and downstream of the construction area. The survey shall include a description of any standing or flowing water. Permittee shall provide Pre-Construction Survey notes and observations to CDFW prior to commencing Covered Activities.

If foothill yellow-legged frog are found during the Pre-Construction Survey, Permittee shall:

1) Consult CDFW immediately by either telephone or email and provide a short description of observations, including a count of individuals and the life stage(s), condition at the site, and other aquatic species observed; and
2) Either propose site-specific measures that Permittee shall use to avoid take, or consult with CDFW to obtain an Incidental Take Permit (ITP) if take of foothill yellow-legged frog may occur during project activities. Permittee shall not commence instream work until CDFW has provided written approval of the proposed avoidance measures or issued an ITP.

If no foothill yellow-legged frogs are found during the Pre-Construction Survey and no surface water is present in the Project Area, work may commence without further surveys.

If no foothill yellow-legged frogs are found but surface water is present during the Pre-Construction Survey, or if surface water becomes present at any time during the work period, the Biologist shall survey the work site each day before commencement of work activities where equipment and/or materials may come in contact with foothill yellow-legged frogs, streams, or riparian habitat.

If foothill yellow-legged frogs are observed at any time during Covered Activities, Permittee shall halt work in the immediate area and immediately contact CDFW. Permittee may propose site-specific measures that Permittee shall use to avoid take, or consult with CDFW to obtain an Incidental Take Permit (ITP) if take of foothill yellow-legged frog may occur during project activities. Permittee shall not resume Covered Activities until CDFW has provided written approval of the proposed avoidance measures or issued an ITP.

Seasonal Work Restriction:

Permittee shall ensure that Covered Activities involving construction and heavy equipment use (such as excavation, grading, and contouring) that are conducted in streams, ponds, and riparian areas are limited to the period from July 15 to October 15[9]

[9] Time period is geographic- and precipitation-specific (generally, fall-winter) to avoid the breeding season (generally, spring) as well as the period when larval and subadults are in the stream and stream margins (generally, summer). Note this measure is for minimization of impacts, not avoidance.

of each year (Dry Season) until the expiration of this ITP. Any work outside of the Dry Season shall be subject to approval of CDFW.

Exclusion-Fencing:

Prior to commencing Covered Activities, Permittee shall install exclusion fencing to prevent foothill yellow-legged frog from dispersing into the Project Area. Permittee shall submit the design to CDFW for approval no less than 30 days prior to the proposed start of Covered Activities. Permittee shall place the exclusion fencing around the construction footprint and the exclusion fencing shall be maintained by the Permittee throughout all construction activities. The Biologist shall inspect the area prior to installation. The Biologist shall inspect the exclusion fencing daily and after storm events. The Permittee shall maintain and repair the exclusion fencing immediately to ensure that it is functional and without defects. The exclusion fencing shall be:

- Properly installed, both trenched in and vertically stout, and regularly maintained to be effective.
- At lease three-feet in height.
- The top few inches of the exclusion fencing must be folded over and away from the construction area.

To avoid potential entanglement of foothill yellow-legged frog, the Permittee shall not use plastic monofilament netting.

The exclusion fencing shall remain in place until the Permittee completes all Covered Activities and removes all construction equipment from the site. The Biologist shall relocate any foothill yellow-legged frog found along the fence[10]. Permittee shall provide refuge opportunities such as natural cover objects (e.g., fallen logs, leaf litter, and branches), or artificial cover boards[11] along or near the outside of the exclusion fence. The Permittee shall avoid damage to small mammal burrows to the maximum extent possible during installation of the exclusion fencing.

[10] It may be beneficial to have the Biologist walk along the fence line each morning. Foothill yellow-legged frogs are in the same family as California red-legged frogs. California red-legged frogs are nocturnal and move in a linear manner – they will not usually turn and walk along a fence line like other amphibians (e.g., California tiger salamanders). Rather, they will remain in place or try to climb the fence and may desiccate (Jeff Alvarez, personal communication, May 01, 2013).
[11] Refuge opportunities need to provide shade. Cover boards are commonly used as a trapping method as amphibians use them as shelter (Enge, 1997).

If exclusion fencing is required in flowing water, Permittee shall install exclusion fencing up- and downstream of the work area. The fence shall consist of 1/4-inch mesh or smaller opening material, preferably of wire, or alternatively fabric netting if capable of withstanding flow. Fencing must be sufficiently anchored to the streambed to prevent immigration of frogs and tadpoles.

Foothill Yellow-Legged Frog Relocation Plan:

Permittee shall develop a Relocation Plan for foothill yellow-legged frog and submit it to CDFW for approval prior to ground-disturbing activities. The Relocation Plan shall include what life stage(s) will be relocated (e.g., adults or egg masses) and specific protocols for each life stage. The Relocation Plan shall quantify the amount, location, and quality of suitable receiving habitat (e.g., breeding and dispersal habitat). The Relocation Plan shall include capture and handling methods specific to each life stage.

Foothill Yellow-Legged Frog Observation:

During all phases of Project construction operation and maintenance, all workers shall inform the Biologist if they encounter foothill yellow-legged frog within or near the Project site. All Covered Activities with potential to take the foothill yellow-legged frog shall cease until the animal moves from the construction area on its own accord. The Biologist may relocate the animal outside the area of construction, in accordance with the Relocation Plan, if the Biologist determines that relocation is necessary.

The Biologist shall submit all observations of the foothill yellow-legged frog to CDFW's California Natural Diversity Database (https://www.wildlife.ca.gov/Data/CNDDB within 60 calendar days of the observation and the Biologist shall include copies of the submitted forms with the next Monthly Compliance Report or Annual Status Report, whichever is submitted first relative to the observation.

Capture and Handling:

Foothill yellow-legged frog shall be handled using methodology described in the Restraint and Handling of Live Amphibians (Appendix D), and in accordance with the Fieldwork Code of Practice (Appendix E).

Decontamination:

Permittee shall ensure all project personnel adhere to the current version of the California Department of Fish and Wildlife Aquatic Invasive Species Decontamination Protocol for all field gear and equipment that will be in contact with water or foothill yellow-legged frogs. Heavy equipment and other motorized or mechanized equipment that comes in contact with water should generally follow watercraft decontamination protocols found in the Decontamination Protocol.

No Night Work or Lighting:

Permittee shall not use night lighting in the Project Area. All project activity shall terminate 30 minutes before sunset and shall not resume until 30 minutes after sunrise. The Permittee shall use sunrise and sunset times established by the U.S. Naval Observatory Astronomical Applications Department for the geographic area where the project is located (http://aa.usno.navy.mil/data/docs/RS_OneDay.php).

Water Diversion:

Permittee shall develop a Water Diversion Plan for foothill yellow-legged frog and submit it to CDFW for approval prior to in-stream activities. The Water Diversion Plan shall do the following:

1. Specify water intake screening (e.g., screen material, size, cleaning method, etc.).
2. Identify the proposed instantaneous flow reduction and duration of reduction from the source stream.
3. Disclose potential impacts associated with both the instantaneous flow reduction and cumulative flow reduction and total volume removed from the source stream.
4. Identify proposed recommendations for minimizing adverse impacts such as reduced hose diameter, decrease in pumping rates, use of alternative sites and/or restrict number of water withdrawals from one location.

Water Storage Facilities:

Permittee shall regularly inspect all water storage facilities, including secondary containment structures, for leaks and to ensure integrity; Permittee shall make repairs immediately. To prevent rupture or overflow and runoff, Permittee shall ensure water storage facilities are equipped with a float valve, or equivalent device, to shut off diversion when storage facilities are full.

Season of Diversion:

Permittee shall confine the period of diversion to December 15 through March 31. Permittee shall plug, cap, block (e.g., with a shut-off valve), or remove all intakes at the end of each diversion season.

Bypass Flow:

Permittee shall ensure that diversion facility passes sufficient flow at all times to keep fish and wildlife resources below the facility in good condition. If at any time the diversion rate identified in the Water Diversion Plan cannot be maintained, Permittee

shall cease diversion and all natural flow shall be allowed to bypass the point of diversion.

Diversion Materials:

Permittee shall not use or construct the diversion structure with materials deleterious to fish or wildlife, including, but not limited to, particle board, plastic sheeting, bentonite, pressure treated lumber, creosote, concrete, or asphalt.

Diversion Monitoring:

Permittee shall install and maintain an adequate measuring device for measuring the instantaneous and cumulative rate of diversion. The device shall be installed within the flow of diverted water. Permittee shall maintain records of diversion with the date and time diversion occurred.

APPENDIX D. Restraint and Handling of Live Amphibians

Citation:
Green, D. E. 2001. Restraint and handling of live amphibians. Amphibian Research and Monitoring Initiative Standard Operating Procedure, No. 100. National Wildlife Health Center. Available from http://www.nwhc.usgs.gov/publications/amphibian_research_procedures/handling_and_restraint.jsp (accessed Month Year).

STANDARD OPERATING PROCEDURE
ARMI SOP No. 100
Revised, 16 February 2001

I. PURPOSE:

Provide guidelines for humane handling of amphibians so that injury and distress to the amphibian are minimized.

II. SCOPE:

These guidelines apply to larvae and tadpoles, as well as adult frogs, toads, salamanders and neotenes. Because of their anatomically different and very delicate skin, tadpoles and larvae must be handled differently than post-metamorphic amphibians.

III. EQUIPMENT and SUPPLIES:
- a. Standard capture equipment (seine nets, dip nets, minnow traps)
- b. Clear plastic bags (half liter or full liter size)

IV. BACKGROUND:

There are three main hazards associated with handling live amphibians: two to the amphibian and one to the handler. To amphibians, the main dangers of being handled are skin damage that could result in secondary skin infections, and bone and muscle injuries caused by struggling when being held. For the handler, the main danger comes from toxic skin secretions produced by some amphibians (in the USA, this is mostly newts and the introduced giant/marine toad).

Tadpoles and larvae have thin delicate skin that is very easily damaged by the slightest handling. The skin of larvae lacks keratin and has fewer cell layers than adult amphibian skin. Therefore, direct contact handling of tadpoles and larvae is to be avoided; instead, these amphibian stages are examined through clear flexible plastic bags containing water. Although the skin of adult (post-metamorphic) amphibians has keratin and is less delicate than larval skin, their skin is still much more delicate than the skin of reptiles,

birds and mammals. Rough handling of adult amphibians can easily result in skin abrasions, small tears, punctures, erosions and ulcers; normally, minor skin wounds heal quickly, but if contaminants, sewage or high levels of microorganisms are present in the pond or other environment, then wound infections are possible.

Frogs and Toads: All amphibians can be expected to struggle following capture. For anurans, there is a danger that vigorous kicking with the hind limbs can cause joint dislocations or a broken (fractured) back; broken backs are a well-documented and major problem in another species that moves by hopping--rabbits. Therefore, proper restraint of anurans, first and foremost involves inhibiting their ability to kick.

Salamanders: For salamanders, there are three major dangers associated with handling: 1) loss (automizing) of the tail, 2) damage to the very delicate external gills (in neotenes), and 3) back injury during whip-like thrashing movements.

V. METHODS OF PHYSICAL RESTRAINT:
- a. Anurans: Medium and large size frogs and toads (those about 5 grams and larger) should be grasped around the waist with the hind limbs fully extended. The animal should not be allowed to bend (flex) its hip and knee joints, since this would allow it to kick.
- b. Caudates: Medium and large size salamanders (those about 5 grams and larger) should be grasped in the middle of the body between the forelimbs and hind limbs. Larval and neotenic salamanders should never be grasped around the head or neck, because the gills can be easily damaged. Under no circumstances should salamanders be grasped by the tail or picked up by the tail.
- c. Larvae: All larvae (including tadpoles) should be handled with nets or scoops. For examinations, the larvae should be placed in a clear plastic bag with a mild amount of water. Alternatively, larvae may be sedated with an anesthetic and examined in a dish or bowl of water. As much as possible, larvae should be examined only while they are in water. Larvae should not be grasped with bare hands.

VI. MISHAPS:
- a. Skin wounds: If an amphibian suffers a skin wound during handling, it is recommended that the wound be sprayed with the over-the-counter product, Bactine® (See the SOP on Toe Clipping of Frogs and Toads, NWHC ACUC Protocol 2001-004). All other topical antiseptics and disinfectants (sprays and ointments) are CONTRAINDICATED in amphibians. If possible, the animal should then be released on land rather than into water, since the antiseptic spray would be quickly washed off in water.

b. Broken back: If a frog or toad suffers a broken back during capture or handling, it should be promptly euthanized. It would be inhumane to release such a crippled animal. An animal with a broken back will have serious damage to the spinal cord and should show almost immediate paralysis of the hind limbs and tail. Recommended methods of humane euthanasia include (see NWHC ACUC Protocol 1999-009, Methods of Euthanasia):
    i. Pithing
    ii. Overdosing in anesthetic solutions of MS222 or benzocaine
    iii. Application of a benzocaine-based topical ointment (as used by humans to relieve toothaches) to the top or the head and dorsum of the body.
c. Broken leg: If a major bone of a limb is broken during capture or handling, the animal should be euthanized or taken to a wildlife rehabilitation center or veterinarian for treatment. A broken leg bone typically is recognized as an abnormal bend in the leg where there is no joint; other signs of a broken leg bone are protrusion of a bone fragment through the skin, inability of the animal to move a limb or position a leg in its normal resting posture. After treatment, amphibians with broken bones might be given to a zoo or placed in a captive breeding program. Only if the injured amphibian is kept isolated from all other fish, amphibians and reptiles (e.g., in a separate cage) during treatment, can it later be considered for release at the point of capture. Injuries to digits (toes and fingers) generally are not life threatening; if the skin of the injured toe also is wounded, then treatment with Bactine® prior to immediate release is acceptable. If a toe bone is broken and protruding through the skin, the affected toe may be amputated just proximal to the site of the fracture, the stump should be sprayed with Bactine®, and the animal may be released.
d. Automized tail: If a salamander automizes (detaches) its tail during capture or handling, the stump should be treated (sprayed) with Bactine®; the salamander can then be promptly released.
e. Crushing injuries to head and body: Amphibians that have serious injuries to skin, muscles and bones should be promptly euthanized. Crushing injuries that are limited to a limb or tail will require treatment at a wildlife rehabilitation center or a veterinary clinic; alternatively, the animal may be euthanized, but it would be inhumane to release a seriously injured amphibian.
f. Snout abrasions: Amphibians that are held in glass or clear plastic containers may jump headfirst into the glass, or may rub their snout against the container in attempts to burrow out. If amphibians are held for more than an hour in a clear container (bottle, aquarium, etc.), they should be examined for evidence of skin injury at the tip of the snout and elsewhere around the head prior to release. If abrasions are detected, they should be sprayed with Bactine® prior to release.
g. Toxic skin secretions: All amphibians have glands in their skin that secrete a vast number of chemicals; some of which are merely noxious and repellant-like, while others may cause skin or eye irritation, and some may actually kill. The poison-dart frogs of Central America are an example of a frog with toxic secretions that can kill a human. Among the native amphibians of the United States, the two amphibians of greatest concern are giant toads (also called cane toads, marine toads, aga toads; *Bufo marinus*) and western newts of the genus, *Taricha*.

Giant toads secrete a potent white mucoid substance from their parotid glands (large warts just behind the eyes) that affects the heart, but it is not absorbed through the intact human skin; however, the toxin is readily absorbed through the eyes and mouth. Hence, the best way to prevent poisoning is to carefully avoid rubbing the eyes or putting fingers in the mouth after handling a giant toad. If skin secretions of giant toads contact the eye or mouth, then flush promptly with generous amounts of clean fresh water or contact lens wetting solution, and then seek emergency care at a clinic or hospital if stinging or numbness of the eye or mouth develops.

Newts of the genus, *Taricha*, also secrete toxins from their skin; it is presumed that the entire body of these newts secretes toxins (newts and other salamanders do not have parotid glands). Their skin secretions are very irritating to the eyes and mouth. Temporary blindness (lasting about 24 hrs) has been reported by field biologists that handled newts and then rubbed their eyes. If sensations of blurred vision, or burning or stinging of the eyes occur after handling any genus or species of newt, wash the eyes with copious amounts of fresh clean water (or contact lens wetting solutions) and promptly seek medical care. Persons with newt skin secretions in their eyes are advised not to drive a vehicle or operate other dangerous or heavy equipment.

Finally, it is possible that other amphibian species in the USA besides giant toads and newts, could produce skin secretions that are irritants to the eyes. Furthermore, amphibians may carry some bacteria in their intestines and feces that are human pathogens, such as the bacteria, Salmonella and Leptospira. Hence, it is always best to practice good personal hygiene after handling any amphibian (namely, thoroughly wash your hands with soap and water).

VII. CITED LITERATURE:

1. MARTIN, D., and H. HONG. 1991. The use of Bactine® in the treatment of open wounds and other lesions in captive anurans. Herpetol Rev 22: 21.

APPENDIX E. The Declining Amphibian Task Force Fieldwork Code of Practice

[This] code of practice, [was] prepared by the Declining Amphibian Task Force (DAPTF) to provide guidelines for use by anyone conducting fieldwork at amphibian breeding sites or in other aquatic habitats. Observations of disease and parasite-infected amphibians are now being frequently reported from sites all over the world. This has given rise to concerns that releasing amphibians following a period of captivity, during which time they can pick up unapparent infections of novel disease agents, may cause an increased risk of mortality in wild populations. Amphibian pathogens and parasites can also be carried in a variety of ways between habitats on the hands, footwear, or equipment of fieldworkers, which can spread them to novel localities containing species, which have had little or no prior contact with such pathogens or parasites. Such occurrences may be implicated in some instances where amphibian populations have declined. Therefore, it is vitally important for those involved in amphibian research (and other wetland/pond studies including those on fish, invertebrates and plants) to take steps to minimize the spread of disease and parasites between study sites.

1. Remove mud, snails, algae, and other debris from nets, traps, boots, vehicle tires, and all other surfaces. Rinse cleaned items with sterilized (e.g., boiled or treated) water before leaving each study site.
2. Boots, nets, traps, etc., should then be scrubbed with 70% ethanol solution (or sodium hypochlorite 3 to 6%) and rinsed clean with sterilized water between study sites. Avoid cleaning equipment in the immediate vicinity of a pond or wetland.
3. In remote locations, clean all equipment as described above upon return to the lab or "base camp." Elsewhere, when washing machine facilities are available, remove nets from poles and wash with bleach on a "delicates" cycle, contained in a protective mesh laundry bag.
4. When working at sites with known or suspected disease problems, or when sampling populations of rare or isolated species, wear disposable gloves and change them between handling each animal. Dedicate sets of nets, boots, traps, and other equipment to each site being visited. Clean and store them separately at the end of each field day.
5. When amphibians are collected, ensure the separation of animals from different sites and take great care to avoid direct contact between them (e.g., via handling, reuse of containers) or with other captive animals. Isolation from un-sterilized plants or soils which have been taken from other sites is also essential. Always use disinfected/disposable husbandry equipment.

6. Examine collected amphibians for the presence of diseases and parasites soon after capture. Prior to their release or the release of any progeny, amphibians should be quarantined for a period and thoroughly screened for the presence of any potential disease agents.

Used cleaning materials (liquids, etc.) should be disposed of safely and if necessary taken back to the lab for proper disposal. Used disposable gloves should be retained for safe disposal in sealed bags.

APPENDIX F. Invasive Non-Native Control and Eradication

Foothill yellow-legged frogs have been lost from over 50 percent of their historic range in California for a variety of reasons (see Hayes et al. 2016). Removing, controlling, and ultimately eradicating invasive non-native species know to predate foothill yellow-legged frogs would be beneficial and could be a form of mitigation for take and project related activities. Site-specific information based on surveys will inform whether this option is viable or needed and the following information is intended to assist with creating an effective Bullfrog Management Plan.

The following is an example of a bullfrog monitoring and management plan that was part of a Lake or Streambed Alteration Agreement for Region 1. These measures may be used and adapted or modified based on site- and project-specific conditions.

Bullfrog Monitoring and Management Plan Example

General Bullfrog Information

The American bullfrog (*Lithobates catesbeianus* = *Rana catesbeiana*); hereafter bullfrog, is an invasive non-native species in California and poses a significant threat to California's native fish and wildlife resources. Bullfrogs were introduced in California over 100 years ago from eastern parts of the United States as a food supply, but have since caused substantial ecological consequences. Bullfrogs are considered highly invasive and are well documented predators upon a variety of fish and wildlife species, including some that are rare, threatened, and endangered. Human modifications to the environment provide favorable conditions to bullfrogs such as artificially created agricultural ponds, canals and ditches where warm still water occurs. As a result bullfrogs have spread throughout California.

Efforts to control bullfrogs have been met with varying degrees of success because: 1) bullfrogs can be difficult to detect and go dormant from fall through winter, 2) bullfrogs often take cover in difficult areas to manage (e.g., dense vegetation), 3) they can travel long distances to colonize and re-colonize areas, 4) they have high reproductive output, 5) they are weary and readily flee perceived threats, and 6) they can survive physical trauma remarkably well. CDFW scientific staff recognizes there is an urgent and immediate need to develop improved bullfrog management strategies to protect

California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. Public support and implementation of bullfrog control in California is an important conservation strategy that will help protect natural resources for future generations.

Monitoring

Aquatic features (e.g., stream, ponds, oxbows mining ponds, etc.) shall be monitored for bullfrog presence on an annual basis with a minimum of five total surveys, no less than two weeks apart, throughout the months of May-July

- All pond survey effort must be made by a person knowledgeable in bullfrog identification (see reference photos);
- Survey efforts shall include listening for bullfrog calls and slowly walking the complete perimeter of the pond at night* (dusk or later) while shining a flashlight to detect movement and eye-shine.

If bullfrogs are not detected upon completion of five total surveys, or at any other time of the year incidentally, removal efforts are not required that year.

*Day time monitoring can also be conducted to aid detection but is not required under this plan.

Success Criteria

The level of effort needed to successfully manage bullfrog populations varies with infestation levels. This plan shall be considered successfully implemented if sufficient effort is provided to prevent adult bullfrogs from reproducing in the aquatic feature each year, and no bullfrog life-stages can be detected. Bullfrogs are capable of traveling long distances over-land, and on-going efforts will be required to ensure dispersing bullfrogs do not colonize the aquatic feature at a future time.

Options for Management

Two removal methods may by employed for controlling bullfrogs under this plan and include:

- Manual direct removal
- Aquatic feature de-watering (Hydro-modification)

Implementing both reservoir de-watering and manual direct removal is currently believed to be the most effective method of managing bullfrog infestations. For aquatic features that are heavily infested with juvenile bullfrogs and/or tadpoles, the draining of aquatic features will be necessary to break the bullfrog's reproductive life cycle and

prevent on-going reproduction. Prior to conducting aquatic feature dewatering activities, please coordinate with CDFW Environmental Scientist XXXXXXX XXXXXXX by phone at (XXX) XXX-XXXX or via email at: XXXXXXXXXXXX

Direct Removal

All direct removal efforts must be made by the **Biologist**.

- Removal efforts must occur during, but are not be limited to the active/breeding season, occurring May – July;
- A minimum of ***five*** efforts throughout the season are considered necessary;
- Direct removal efforts are typically most effective when conducted at night with use of lights but can also be conducted during the day;
- Direct removal must include working the entire perimeter of the reservoir;
- A rubber raft or small boat may be necessary to successfully remove some individuals;
- A team of two individuals or more is often helpful, one person for shining lights and/or operating a boat and the other person to perform removal efforts;
- Bullfrog tadpoles must be removed and dispatched and must not be relocated or kept as pets.

Management Authorization

Take of bullfrogs is specifically allowed in the California Code of Regulations, title 14, section 5.05, subdivision (a)(28), under the authority of a sport fishing license. There is no daily bag limit, possession limit, or hour restriction, but bullfrogs can only be taken by hand, hand-held dip net, hook and line, lights, spears, gigs, grabs, paddles, bow and arrow or fish tackle.

Alternatively, Fish and Game Code section 5501 allows CDFW, as limited by the Fish and Game Commission, to issue a permit to destroy fish that are harmful to other wildlife. Title 14 regulations have addressed this under section 226.5, Issuance of Permits to Destroy Harmful Species of Fish in Private Waters for Management Purposes. This allows CDFW to issue free permits to destroy harmful aquatic species by seining and draining.

Pond Dewatering

Pond dewatering may be appropriate if the aquatic feature can be successfully dewatered without adversely affecting stream resources. Careful planning and coordination with CDFW, is necessary to ensure potential impacts to stream resources

can be addressed, prior to commencing with pond draining. Discharge of polluted water to Waters of the State may require permitting from other agencies with permitting authority, such as the Regional Water Quality Control Board.

In general, bullfrog larvae require two years to develop into frogs, whereas native amphibians only require one year. Therefore, draining the aquatic feature every year is intended to interrupt bullfrog larval development, dramatically decrease bullfrog populations and allow for reduced efforts as a measure of adaptive management. Typically in Northern California, reservoir draining should occur in September through October to avoid impacts to sensitive native amphibian and fishery resources. While draining occurs, direct removal efforts should be employed as described above if possible.

Reporting

A written log shall be kept of monitoring and management efforts and shall be provided to CDFW **each year** by December 31. The written log shall include: 1) date and time of each monitoring and management effort, 2) approximate number of each bullfrog life stage detected and/or removed per effort, and 3) amount of time spent for each monitoring and management effort.

BULLFROG REFERENCE PHOTOS

This is a photo of a large bullfrog tadpole, in its second year.

The photos shows a medium sized adult bullfrog that was removed from Tenmile Creek, Mendocino County. Note the bullfrog has a large tympanum, (circular eardrum shown with an arrow) and **does not** have distinct ridges along its back (dorsolateral folds).

This bullfrog has somewhat distinct mottling and the underside of the bullfrogs hind legs are not shaded pink, red or yellow.

APPENDIX G. Riparian Enhancement

Foothill yellow-legged frog are highly aquatic but use riparian/upland habitat for overwintering. California has lost more than 90 percent of its riparian habitat and most riparian habitat types are considered Sensitive Natural Communities by CDFW. Improving riparian condition, both in area and diversity, would be beneficial to foothill yellow-legged frogs. Adding complexity, such as downed large wood within the planting area matrix will provide cover and both summer and winter refugia. Riparian enhancement that benefits foothill yellow-legged frog could be a form of mitigation for take and project related activities. The following describes the preparation of a Riparian Restoration Planting Plan.

Last Revision: June 27, 2017

A successful plan will include at minimum the information described below:

1. **Location of the restoration site(s):** This section should include a regional map, general map illustrating planting locations (polygons), location or any other existing or proposed restoration actions in the general vicinity, ownership information, and directions to the site.

2. **Site suitability evaluation:** Provide the rationale behind selecting the restoration site including information on the soils, hydrology (including risk of scour by high flows, characterization of water table depths and water availability for irrigation if proposed), and riparian species present at a nearby reference site(s). This information should be based on field work completed during the planning and design phases for the project. Any reports, data, and other information that support site suitability decisions should be included in the plan.

3. **Site Preparation and installation methods:** Provide a description of the methods that will be used to install the plants with a detailed discussion for each plant species and type of planting stock (container, stem cutting, pole cutting, bare-root stock, etc.), time of the year during which the planting will occur, and any other pertinent information regarding implementation of the project, any necessary site preparation work (i.e., heavy equipment work, stabilization, soil work, etc.) should be described in this section of the plan. Other restoration work to be completed during project

implementation should also be described in sufficient detail to allow for proper evaluation.

4. **Materials:** Provide the list of plant species to be utilized, size of specimens to be used for each species, number of plants, the source of plant materials to be used, fertilizers to be used, if any, and irrigation materials, if necessary. Information regarding the need for plant protection and the materials necessary to accomplish protection should be included. If fertilizer or irrigation are proposed, discuss the rationale behind the proposal including the pros/cons of fertilizer use and a discussion of how irrigation would be used, the type, and the pros/cons of use.

5. **Schematic:** Include a detailed planting design that depicts exactly where the plants will go in the restoration area, including the number of plants and which species to be planted in each location, spacing between plants, and total acreage planned for revegetation.

6. **Maintenance of plants:** Include a description of methods that will be used to maintain plants in good condition, to control non-native vegetation, and prevention of herbivory to the plantings, including a discussion of how maintenance actions will be triggered by changes in plant health over time. If the planting will be irrigated, include an irrigation plan that describes the type of irrigation system that will be used and the watering regime that will be used to successfully establish the plantings. The irrigation plan should be designed to discourage the growth of invasive plants while encouraging deep rooting of planted materials to ensure maximum survival following the plant establishment period.

7. **Success criteria:** Include the performance criteria that will be used to evaluate project success. Performance criteria should be developed for species diversity, structural diversity, overall vegetative cover by species (if important) and how cover will be measured (absolute vs. relative); density (by species); plant vigor; and survivorship. In addition, intermediate thresholds (incremental progress toward performance criteria) should be developed in conjunction with an adaptive management plan that triggers remedial activities that would be implemented if intermediate thresholds are not being met. This will allow the revegetation specialist to increase the likelihood that performance criteria are met by the end of the monitoring period.

8. **Monitoring methods:** Include a detailed description of how the project will be monitored to evaluate whether performance criteria are being met. Include a detailed description of the methods used for data collection, sample size, data entry and storage, statistical analyses to be performed, photo point locations, and a description of the monitoring report format.

9. **Adaptive management and contingency measures:** Describe the projects' adaptive management strategies and what actions shall be implemented if the monitoring data indicates that the performance criteria may not be met. Identify the party responsible for implementing remedial measures and the source(s) of funding to complete actions.

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Caltrans Response:

Comment 1: Caltrans understands that CDFW does not accept In-lieu fees as mitigation for impacts to river, stream, or lake habitat. If necessary, Caltrans intends to purchase credits at a CDFW-approved mitigation bank or mitigation, through stream and *wetland* creation, restoration or enhancement, and creation or improvement of wildlife crossings in conjunction with the project.

Comment 2: Caltrans is currently involved in internal discussions concerning installing wildlife fencing with escape ramps (jump-outs) incorporated into the fencing design along State Route 49 to funnel wildlife through an existing cattle crossing located within the project limits. Caltrans may monitor the cattle crossing with wildlife cameras.

Comment 3: Caltrans intends to include in the project contract a qualified biologist to conduct amphibian surveys (and surveys for other species) 7 days prior to ground-breaking activities. The qualified biologist will monitor vegetation removal for aquatic and terrestrial species, ESA and silt fencing stability, and any other biological commitments for this project.

Comment 4: Regardless of the alternative chosen, Caltrans does not anticipate the project would impede the Placer County Community Conservation Plans (PCCP) ability to meet its biological goals and objectives since there are currently existing intersections at the locations where roundabouts, intersections, or J-turns would be constructed. Additionally, biological surveys have been conducted in the project area for all federally and state listed species and habitats and for those species and habitats covered in the PCCP.

56. Mark & Peggy Meadows

From: Mark & Peggy Meadows
To: PLA 49 Safety Barrier 4H600@DOT
Subject: Re: Auburn Area Roundabout Input
Date: Thursday, June 17, 2021 11:22:38 AM

EXTERNAL EMAIL. Links/attachments may not be safe.

I'm sorry to amend my comments from yesterday, but I forgot to bring another idea up: Since the most dangerous accidents seem to occur mainly between opposing vehicles, rather than at the intersections, and you are already planning median barriers between the subject intersections, how about holding off on putting in either of the proposed intersection controls? Wait and see how it goes with the barriers and adequate turning and merging lanes at the intersections, along with yellow warning/flashing lights at the intersections. Then, would you still be required to add pedestrian crosswalks- are they needed?
Lastly, this is another example of the EIR saying there would be less than significant effect on air quality; with such a high volume of traffic, I would expect that additional slow-downs or stops, along with ensuing accelerations, cause more exhaust and braking emissions from each vehicle at those times...?
Thank You for Reading Again, Peggy Meadows, 775-298-2775

On Wednesday, June 16, 2021, 04:23:28 PM PDT, Mark & Peggy Meadows <mpmeadows@sbcglobal.net> wrote:

To Sandeep Sandhu or Other Staff member: I want you to consider my input before deciding on what to do about the unsafe Hwy 49 conditions north of Auburn. 1st of all, I still support the change to a roundabout at the Auburn intersection of Lincoln/Borland and 49 in-and-out of the American River Canyon and hope you don't get too stalled on that project. But the proposed roundabout project @ Lonestar and Lorenson/Florence intersections would be a mistake, I feel.

Roundabouts take getting used to by those unfamiliar with them, but they work better than signalized intersections on lower speed, busy roads, like Hwy 28 through Kings Beach. However, on busy roads with higher speeds, like Hwy 49 between Auburn and Grass Valley, the roundabout would unnecessarily slow down vehicles when there is no waiting cross-traffic. The result would be more brake wear, more air pollution from slowing and accelerating every trip through there, and longer driving time when there is no need to stop for anyone crossing. At least the traffic signal would (hopefully, if Cal Trans would get the signals synchronized correctly), only cause a slow-down or stop if there is cross traffic waiting.
Sincerely, Peggy Meadows, Auburn, Calif.

Caltrans Response:

Almost one third of the collisions and half the injuries in the segment are at the intersections and the placement of the concrete median barrier allows a secondary safety benefit by placing controls at those locations to allow the public safer access onto and off of Highway 49. The addition of more traffic, those needing to make U-turns, increases the probability of additional collisions and providing intersection controls both reduces that potential and should reduce the

delays experienced by drivers today waiting for a sufficient gap in traffic to make their turning movements.

57. Delana Ruud

June 16, 2021

To: Sandeep Sanhu
California Dept. of Transportation, District 3
703 B St.
Marysville, CA 95901

From: Delana Ruud
10800 Cramer Rd.
Auburn, CA 95602

Dear Mr. Sandheep and Staff:

I have reviewed the 190 page Placer 49 Safety Barrier Project document and have some observations, which I hope you will consider. In addition, I attended the Public Forum held at the Placer County Planning Commission Hearing Room, in the DeWitt complex about two years ago, which had relatively good attendance from the local community. I also tuned in to the two recent Webex internet presentations for which I received an email alert, I assume because I put my name on a list at the Public Forum. My question is: why didn't you put articles in the Auburn Journal and Sacramento Bee to let the public know these two presentations would be forthcoming? A front page article appeared in the Auburn Journal in the June 5-6 edition, so that may generate some response. There is also a local social media messaging system called Nextdoor (nextdoor.com) and Yubanet.com. Occasionally the County of Placer and PG & E use Nextdoor to alert Placer County residents of relevant happenings.

I noted that few tuned into the Webex presentations. I am guessing because people didn't know about them or felt it was a lost cause – that dealing with "government" at any level is a no-win situation. Also internet access in the greater North Auburn area is bad – really hard to access, and expensive. Plus, this area has recently gone, through a long fight with the Placer County Parks Department over the extension of a trail system from Hidden Falls Park off Mt. Vernon Rd. about 11 miles to the north – all the way to the Bear River. It includes a parking lot, known as Twilight Ride on 50 acres for 52 autos and 20 horse rigs on Bell Rd., just south of the Cramer Rd. intersection. People are burned out from attending meeting after meeting over 2-3 years and feel that no one cares about local concerns, so why bother. In addition, I think the Covid pandemic has people at sorts and many are at wits end. The trail expansion and parking lot will go forth, which many in the North Auburn area feel is total insanity due to linking a high-risk wildfire area to an extreme-risk wildfire area in the Bear River area and putting hundreds to thousands of recreationists in the back country to contribute to the probability of wildfire. (CalFire will tell you that over 90% of wildfires are man caused). Trespassing and illegal camping is already happening. In addition, the roads to access the parking lot: Lone Star, Bell and Cramer are substandard at best and full of blind curves, no shoulders, dips, undulations, etc. Cramer is so narrow that it legally cannot have a center stripe, so people drive down the middle of the road, including on the blind curves. Practically every one of the 42 families who live on Cramer or the 3 private roads off it have been run into a ditch, through a fence or nearly sideswiped, some multiple times. Speed, inattention and unfamiliarity with safely traveling on such roads are contributing factors to making every trip risky. Just wait until the parking lot opens up. Crazy drivers and those dragging a horse trailer will contribute further to the unsafe conditions. You need to read the Final Hidden Falls Trail Expansion Project Subsequent EIR and pay special attention to the Wildfire and Transportation sections. In my opinion, they are true examples of County of Placer neglect and irresponsibility. Letters and responses to

the EiR from North Auburn area residents, including a traffic study completed by a licensed engineer and a wildfire analysis completed by several with years of forestry and wildfire experience are also included, but seemingly made little impact.

I have lived on the Ruud family ranch almost my whole life of 76 years, except for time away at college, a year in the VISTA Program, summer jobs in the mountains and two years in Squaw Valley while searching for a professional job. I KNOW these roads, including Hwy 49 like the back of my hand.

I understand your reasoning for the "improvements" to make this stretch of Hwy 49 safer. However, I fail to understand why you have not included the Joerger Rd. intersection, plus the plan really screws up the Cramer Rd. intersection. Currently accessing Hwy 49 from Cramer is dictated by traffic flow spaced by the traffic lights at Higgins Corner and Dry Creek Rd. Adding the turn-lane was a big improvement. Allowing traffic to speed up to 65 mph north of Dry Creek Rd. to Higgins Corner is just plain dumb. People commonly drive 70-80 mph in that stretch of road. Why not change the speed to 55 mph, as it is beyond Higgins Corner? My feeling is no matter what you do : lights or roundabouts, getting on Hwy 49 southbound from Cramer will still be difficult. Drivers simply will not move from the slow lane to the fast lane allowing access. Ever thought about putting up a "merging traffic" sign, or better yet, a merge lane, which would mean widening the Orr Creek bridge ?

Then there is the solid barrier from Lorenson to Lone Star, with NO left turn onto Cramer. You have got to do better than that. How about a tunnel? Going to Lone Star and back to Cramer is going to kill people with health emergencies in need of Paramedics and allow a house fire to double in size EVERY minute. Plus the probability of wildfire in this very risky area is now almost a year-round happening because of the drought and climate change. PLEASE THINK THIS THROUGH. I would encourage ALL of you to drive Bell, Cramer & Lone Star Rds. and to make exits and entrances from/to Hwy 49 from/to Lone Star and Cramer. I would also encourage you to turn onto Joerger to Mt. Vernon during commute hours. You will learn a lot!

Further, by adding three more stoplights on Hwy 49 from Dry Creek Rd. to Bell Rd. is driving people nuts. Stop – go a block-stop- go a block. This is NOT Sunrise Ave. or downtown or Sacramento. Tons of southbound drivers already take Joerger Rd, to Mt Vernon and then weave their way to the Lincoln area – speeding and cutting curves like crazy. My bet is more will now turn onto Cramer to Bell and weave their way to Auburn – speeding and cutting blind curves. So, you are going to trade accidents on Hwy 49 for head-ons on the blind curves on Cramer and Bell and perhaps Joerger to Mt. Vernon. But, you're CalTrans and don't deal with county roads, just contribute to the mess. Instead of a light at Locksley Ln. and Hwy. 49 to the airport and then another light at Shale Ridge to the transfer station, did you think about a link between the two, a hundred or two hundred yards east of Hwy 49 ? There is vacant property between the two roads. Only allow right turns from the northbound lane to Locksley and no turns from or onto the southbound lane. Please think about that… think outside the box! It would be one less light, one less stop and less anxiety.

OK – now for some comments re the Document:

Pg. 2 Purpose and Need: You could have included a Chart of the Accidents : types, numbers, dates, location. Only basing your decision on Data 1/1/2015 – 12/31/2017 I believe is very short sighted. I can recall FOUR fatalities at or near the Joerger intersection: a head-on, a T-bone and two kids going southbound hydroplaned, hit a car and went off the road.

Pg. 10 The description of Alternative 3 is very confusing. I don't recall your discussing it during the 2 on-line Presentations. However, it appears not to be a consideration.

Pg. 11 Parks and Recreation While the Hidden Falls parking lot is on Bell Rd and NOT on Hwy 49, you had best be in contact with the County of Placer. There will be a ton of people using Hwy 49 and mostly Cramer Rd. to access Bell Rd. Some will be dragging 2-4-6 animal horse trailers. Just wait until they hit the BLIND curves that the truck has to go way over the (imaginary) center stripe to get the trailer around the curve. Head-on .... here we come!

Pg. 11 Farmlands The Oest property is in the Williamson Act and the Map on Pg. 14 shows it to be designated Agricultural 10-80 Acre Minimum.

Pg. 12 ...See comments for Pg. 11

Pg. 17 Placer County Regional Transportation Plan A day late and many dollars short. Have you been down Hwy 193 from Newcastle to Lincoln lately? Build and they will come, but only if you have big bucks – no affordable housing here! Never mind that the roads are going to be totally overwhelmed. Infrastructure be damned! Pre-planning – what's that? And then there is the matter of water: the new California gold, is in very short supply. Someone(s) in this county won't be happy until the whole county is totally covered with houses/paved over/people wall-to-wall. Only then will they back themselves into a corner and say to themselves, "we have met the enemy and he is us".

Pg. 19 Access to destinations/access to new destinations See Pg. 1, Paragraph 2 re the Hidden Falls Parking Lot on Bell aka Twilight Ride

Pg. 26 Alternatives 2 and 3 will require full acquisition of two properties and one partial acquisition that will lead to two residential displacements. What is the location of these properties?

Pg. 30 The intersection crossroads are described as follows. The roads are poorly described, especially Cramer Rd, which is so narrow that it legally can have no center stripe and is replete with blind curves, no shoulders and dips and undulations. No mention is made of Auburn Valley Country Club, which is surrounded by 148 homes. The entrance is at the intersection of Lone Star and Bell Rds. No mention is made of the Hidden Falls trail expansion parking lot known as Twilight Ride, to be located 3/8 of a mile south of the Cramer and Bell Rd. intersection. Both of these are and will be huge traffic generators on Cramer. Just think of their angst now having to go to Lone Star and back to Cramer.

Pg. 32 Study Intersections You need to read the Final Hidden Falls EIR Transportation section as well as the Placer County Winery and Farm Brewery Ordinance Final EIR Transportation section.

Pg.34 Induced Travel See preceding comment.

Pg. 93 Animal Species I find it difficult to believe that wildlife: deer, skunks, possum, raccoon, bobcat, etc will not be impacted by the Barrier. Have they learned to use the tunnel on the Oest Ranch?

Pg. 97 No Impact You had best do some research: the Oest Ranch is in the Williamson Act.

Pg. 108 CEQA Significance Determination for Public Services / Less than Significant Impact

I find it extremely disconcerting that it is your belief that, " the project would not result in direct impacts on fire, police or other public (? services) and is not anticipated to adversely affect response time for emergency services." Would you like to explain that to the family when someone at a residence dies because paramedics had to go to Lone Star and come back to Cramer ...that would take an additional 4 to 5 minutes; or the house fire that doubles in size every minute; or the auto accident on Cramer or Bell Rd. that needs emergency response that has to go to Lone Star and then come back to Cramer. And then there is the matter of house fires and wildfire in the greater Lone Star area. Plus one more: the need for emergency response for the hundreds to thousands traipsing on the Hidden Falls trail expansion that you don't even appear to know about.

So, you are doing a calculated switch. You will trade accidents on Hwy. 49 for response time for desperately needed emergency needs on Bell, Cramer and Lone Star Rds.

It is my belief that you need to do some more soul searching. And do a far better job of contacting the public for input.

Sincerely,

Delana Ruud

From: Delana Ruud <druud@inreach.com>
Sent: Wednesday, June 2, 2021 7:30 PM
To: Borrayo, Raquel@DOT <Raquel.Borrayo@dot.ca.gov>
Subject: RE: REMINDER: Second Public Meeting Scheduled for State Route 49 Safety Project

EXTERNAL EMAIL. Links/attachments may not be safe.

Please mail me a hard copy of the Proposed Mitigated Negative Declaration/Environmental Assessment document. You can be assured that I will read every page and will respond. This document is nothing compared what we have had to wade through from the County re their expansion of the Hidden Falls trail system all the way to the Bear River, including a parking lot on Bell Rd. about 3/8 of a mile South of the Cramer Bell intersection.

Please mail to : D. Ruud
10800 Cramer Rd.
Auburn, CA 95602

Thank you, Delana Ruud

Caltrans Response:

Environmental mailed a hard copy of the Draft Environmental Document to Delana Ruud on 6/4/2021.

The COVID-19 pandemic imposed many restrictions on public gatherings for the safety of community members and Caltrans staff members. At the time of the Draft Environmental Document circulation period, public gathering restrictions were still in place by the California Occupational Safety and Health Administration. Caltrans worked diligently to deliver virtual public meetings to present the project to the public, answer questions and receive feedback, given public gathering restrictions. A variety of meeting participation methods were also made available including a call-in phone number via WebEx and a separate conference call line for those that may not have had access to high-speed internet.

Given that the State Route 49 corridor is highly traveled by commuters traveling between Auburn and Grass Valley, public meeting notices were published in both the *Auburn Journal* and *The Union* with meeting details prior to the first May 26 virtual meeting. The virtual meetings and comment period were also publicized with articles on YubaNet.com, a radio interview on KNCO-AM, and in the *Auburn Journal* and *The Union*.

The Nextdoor app is not currently approved for use and promotion by Caltrans Headquarters. However, Caltrans promoted the virtual meetings on social media with press releases distributed to local and Sacramento media outlets, local agencies and community members.

Hidden Falls Regional Park, its impact, and the conditions on Cramer Road fall outside Caltrans jurisdiction. Placer County has responsibility for Cramer Road beyond that point. We suggest that you contact Placer County at 530-745-7591 to further discuss your concerns over the local roadways.

The SR49 Transportation Report traffic projections (Fig. 6, Fig 10, Fig. 11) anticipate that the traffic at the intersection of SR49 and Cramer Road under the No Build scenario (Alt 4) is expected to increase by 12 vehicles in the am peak hour and by 29 vehicles in the pm peak by the Year 2045. Under Alt 1-3 (Fig. 9 and Fig. 11), these volumes remain the same or decrease.

Joeger Road was reviewed at the time the project was initiated in 2018 but it did not qualify for similar safety improvements. We have recently reviewed Joeger Road again, with the latest collision data available and it still does not qualify for an improvement under Highway Safety Improvement Program (HSIP) guidelines.

Because this is a HSIP project we are primarily limited to funding that addresses the existing collision pattern and the widening of Orr Bridge was considered but not found necessary to address the cross median collision pattern. Once the median barrier is installed, all traffic entering Highway 49 will be making a right turn only from Cramer Road. We will review again the traffic count data collected from Cramer Road and evaluate the need for additional signage to announce merging traffic in accordance with the California Manual of Uniform Traffic Control Devices (CA MUTCD) policy.

Per the California Vehicle Code (CVC) 22349 the speed limit on a highway is 65 mph and 55 mph only applies to two lane highways. Per CVC 21651, this segment of SR 49 is a divided highway because it has a median of more than 2 feet and as such it cannot be classified as a two-lane highway. Speed enforcement is under the purview of the California Highway Patrol. We understand the concern about Cramer Road and emergency response and we are continuing to evaluate, with our emergency services partners, the need to provide an emergency access opening just north of Cramer Road for emergency services to make a U-turn at that point and reduce their travel time by about 90 seconds, versus the expected travel time to Lone Star Road and back to Cramer.

Because this is a HSIP collision severity and reduction project and the median barrier will create out of direction travel, it is essential that the Department provide viable and safe U-turn movements for traffic cut off from making left turns onto Highway 49, including at Cramer Road. Because the nearest U-turns outside the project limits are about 3 or more miles away, we need to provide them at Lone Star and Lorenson/Florence Roads for public convenience.
The project at Locksley Road is part of a larger project that is doing pedestrian and safety improvement on Highway 49 from near I-80 to near Dry Creek Road. The new signals met CA MUTCD warrants that support them being installed for both public safety and convenience, respectively.

Page 2. As to the Purpose and Need collision comment, the project was initiated in mid 2018 and per HSIP guidelines was based on 2015-2017 collision data. As noted above we continue to review the collision pattern in the area around Joeger Road to see if it qualifies for a project under the HSIP.

Page 10. As to the alternatives, we most often discuss a No Build alternative for comparative purposes. In this case, the No Build alternative would not address the cross-centerline collision pattern and was therefore rejected. We also studied an additional alternative of a Reverse Crossing U Turn, that would require traffic to pass their intersection then make a U turn across

traffic with a widening outside the existing shoulder to allow vehicles to complete the U turn and then accelerate back into lane and make their right turn downstream. However, this option presented safety concerns for U turns across live traffic and was determined to be not fiscally responsible.

Pages 11, 30, 32, and 34. As noted above, the Department does not have control over local or private roads outside the State highway right of way boundaries. Please contact Placer County Public Works to discuss your concerns.

Page 17. Highway 193 is outside the scope of this project, however development along the highway is reviewed by the Department as part of an Intergovernmental Review process and we request improvements related to the development where required. Additionally, a private residence or business that is being developed and wants to access the highway must go through the Encroachment Permit process and once again we conduct reviews of the application and as necessary require improvements to the highway.

Page 93. We are currently working with the Department of Fish and Game and evaluating the need for addition of animal fencing to try and guide animals, especially deer, to certain points to cross the road in the project corridor.

Even though, there are parcels of land under the Williamson Act contract within the project limits, there will be no impact any Prime Farmland or Farmland of Statewide Importance. Therefore, the impact to these parcels will be minimal and only for intersection improvements.

As noted above, our purpose is to address cross centerline collisions on Highway 49. This project will provide a secondary safety benefit at Lone Star and Lorenson/Florence Road of providing a controlled access intersection to reduce collisions at that location. As noted, we are working with our emergency services partners on how best to address their emergency response to locations such as Cramer Road and we will jointly come up with the best solution possible and implement it with the project.

58. Robert Lethbridge

From: RLethbridge
To: PLA 49 Safety Barrier 4H600@DOT
Subject: Hwy 49 safety project
Date: Thursday, June 17, 2021 3:21:25 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

I am off the Lone Star intersection. I support the placement of traffic lights. Roundabouts are utterly impractical for this location. Horse and cattle trailers are common users and "roundies" offer no improvement. I see no gain even for regular drivers given the high speeds and limited visibilities.

The project as given is unnecessarily complex and costly. For example, there is no real requirement for large trucks to have a U-turn ability. The median barrier may only be needed on the curve before Lone Star.

The basic problem in the area is the 65 mph speed limit. Safety would promptly Improve if the speed were lowered to 55.

Robert Lethbridge

Caltrans Response:

Roundabouts are specifically designed to allow vehicles, in this case a tractor trailer or someone towing a horse trailer, to make a U-turn. They are also designed such that drivers will need to slow to approximately 25 mph to be able to enter the roundabout and for Lone Star specifically, the plan is to lay back the steep slope along southbound Highway 49 to improve the sight distance to the intersection. The concrete median barrier limits were identified as part of the Highway Safety Improvement Program.

Per the California Vehicle Code (CVC) 22349 the speed limit on a highway is 65 mph and 55 mph only applies to two lane highways. Per CVC 21651, this segment of SR 49 is a divided highway because it has a median of more than 2 feet and as such it cannot be classified as a two-lane highway. Speed enforcement is under the purview of the California Highway Patrol.

59. Nancyjo Riekse

From: Nancyjo Riekse
To: PLA 49 Safety Barrier 4H600@DOT
Subject: Traffic signal please
Date: Thursday, June 17, 2021 3:58:24 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

I live on Lorenson Rd and would prefer a signal over a roundabout.

The high volume of cars turning onto Lorenson from 49 can be backed up 5 to 6 cars in the turn lane (suicide lane) and trying to merge onto 49 during peak traffic hours. These situations are not conducive to a roundabout.

Also on Monday's and Thursday's when the Auburn Trapshooting Club is open the cross, turning and merging traffic more then doubles. And when they have tournaments it brings in 150 to 200 cars..... up to 8 times a year really increasing and backing up traffic on both 49 and Lorenson Rd.

Anything you can do to slow down the cars and creating a safer way to cross or merge onto 49 would be appreciated but I just don't see how a roundabout is the safest way to accomplish this.

Until this project is started is it possible to get a flashing light cross traffic sign, like at Lone Star, placed at Lorenson, please.

Regards
Nancyjo Riekse
Nancyjor9@sbcglobal.net

Caltrans Response:

Roundabouts are a proven safety countermeasure for highway design and the Federal Highway Administration has published a number of technical papers on design and benefits, which have been reviewed by Caltrans in partnership with roundabout experts outside the Department to provide the safest and best design possible. Roundabouts provide a number of benefits related to collision and severity reduction, reduction of greenhouse gases due to not having vehicles idle at a signal, and provide a reduction in traffic speed to be able to enter, transit and depart the roundabout as some examples. As noted in the presentation a decision on a final alternative is still being discussed by the Project Development Team.
Per the California Vehicle Code (CVC) 22349 the speed limit on a highway is 65 mph and 55 mph only applies to two lane highways. Per CVC 21651, this segment of SR 49 is a divided highway because it has a median of more than 2 feet and as such it cannot be classified as a two-lane highway. Speed enforcement is under the purview of the California Highway Patrol.

60. Greg Hendricks – Environmental Scientist, Central Valley Regional Water Quality Control Board

Central Valley Regional Water Quality Control Board

17 June 2021

Sandeep Sandhu
California Department of Transportation
703 B Street
Marysville, CA 95901

COMMENTS TO REQUEST FOR REVIEW FOR THE MITIGATED NEGATIVE DECLARATION, PLACER 49 SAFETY BARRIER PROJECT, SCH#2021050409, PLACER COUNTY

Pursuant to the State Clearinghouse's 19 May 2021 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Mitigated Negative Declaration* for the Placer 49 Safety Barrier Project, located in Placer County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of

Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues. For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at:
https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf

In part it states:

Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.

This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), Construction General Permit Order No. 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ. For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic

[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications. For more information on the Water Quality Certification, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/

Waste Discharge Requirements – Discharges to Waters of the State

If USACE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at:https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/

Projects involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state and projects involving dredging activities impacting less than 50 cubic yards of non-jurisdictional waters of the state may be eligible for coverage under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004). For more information on the General Order 2004-0004, visit the State Water Resources Control Board website at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2004/wqo/wqo2004-0004.pdf

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Threat General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Threat Waiver) R5-2018-0085. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Threat Waiver and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2018-0085.pdf

Limited Threat General NPDES Permit
If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Limited Threat Discharges to Surface Water* (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf

NPDES Permit
If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit. For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/help/permit/

If you have questions regarding these comments, please contact me at (916) 464-4709 or Greg.Hendricks@waterboards.ca.gov.

Greg Hendricks
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

Caltrans Response:

Thank you for your comment. Caltrans will adhere to the measures outlined above.

61. Michelle Bernal

From: Michelle Bernal
To: PLA 49 Safety Barrier 4H600@DOT
Subject: Traffic Light for Lone Star Road
Date: Thursday, June 17, 2021 4:06:40 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

I live off of Lone Star Road and have actually never turned left to go into town. I always drive down to Combie and turn around even though that adds six miles on to my journey. It's just too dangerous to try and make a left hand turn on to 49 from Lone Star.

The sad reality is that not many people know how to navigate through a roundabout and a street light would make much more sense. There is a light at Combie and the wait is never very long and it slows people down. People drive way too fast on 49 and come around that corner towards Lone Star very quickly.

I realize today is the last day for feedback but wanted to share my thoughts with you in hopes that a traffic light can be installed instead of a roundabout on 49 and Lone Star.

Thank you,
Michelle Bernal
6400 Bear River Lane
Auburn, CA 95602

Caltrans Response:

Roundabouts are a proven safety countermeasure for highway design and the Federal Highway Administration has published a number of technical papers on design and benefits, which have been reviewed by Caltrans in partnership with roundabout experts outside the Department to provide the safest and best design possible. Roundabouts provide a number of benefits related to collision and severity reduction, reduction of greenhouse gases due to not having vehicles idle at a signal, and provide a reduction in traffic speed to be able to enter, transit and depart the roundabout as some examples. As noted in the presentation a decision on a final alternative is still being discussed by the Project Development Team.

62. John Burnside

From: John Burnside
To: PLA 49 Safety Barrier 4H600@DOT
Subject: State Route 49 Safety Barrier Project—COMMENTS
Date: Thursday, June 17, 2021 11:33:09 PM
Attachments: RCUT Presentation-001.pdf
Screen Shot 2021-06-17 at 10.30.04 PM.png

EXTERNAL EMAIL. Links/attachments may not be safe.

I am a vigorous proponent of modern roundabouts, but they don't belong everywhere. Roundabouts should not be incorporated into this project.

1. ICE Has an Intersection Control Evaluation been done? If so, what did it recommend? I believe an ICE is required before deciding between alternatives.

2. FHWA GUIDE NCHRP Report 672, *Roundabouts: An Informational Guide*, states that these two intersections should not be considered for roundabouts because of the very low cross traffic. I quote from the middle of page 3-9 in The Guide:

"Intersections of a major arterial and a minor arterial or local road could create an unacceptable delay to the major road. Roundabouts delay and deflect all traffic entering the intersection and could introduce excessive delay or speed inconsistencies to flow on the major arterial."

3. RCUTS I believe Restricted Crossing U-Turns are a better solution. One pair of RCUTs should be placed at Cramer Road to maintain timely access to emergency vehicles.

California has very few RCUTs,* while other states and the FHWA have found them to be very successful in improving safety. Attached are statistics from a Wisconsin presentation:

North Carolina is the leader in installing RCUTs with a couple hundred built and more planned.

FHWA has a very good RCUT guide
https://safety.fhwa.dot.gov/intersection/rltci/fhwasa14070.pdf

as well as an excellent 5-minute video on RCUTs
https://www.youtube.com/watch?v=nzpdTdXDfRw

*I am aware of only one RCUT—in District 3 on SR-20 just east of Nevada City:

4. ENVIRONMENTAL DOCUMENT I have not read it, but compared to existing conditions, roundabouts would have negative impacts on these items: pollution emissions, fuel usage, and overall travel time.

Again, I love modern roundabouts, but they don't belong here.

John Burnside, P.E., T.E.
Designing roundabouts since 1985
INs and OUTs of ROUNDABOUTS, Inc.
A Catalyst for Well Designed Modern Roundabouts
Initial designer of the 2018 roundabout in Olivehurst, CA,
using the Howard McCulloch method of design
530-575-5007

Caltrans Response:

1. The two intersections being evaluated do not meet control requirements. The intersection controls are being placed to accommodate the out of direction travel created by the safety project. These controls are not independent installations and therefore, the ICE process would not be required by HQ Traffic Safety. However, the ICE process can provide supporting information necessary for the Project Development Team (PDT) to make a better engineering

decision based on future safety, and collision severity reduction. The PDT is using these results, along with the cost estimate, environmental impacts, and right of way purchase requirements, to make the formal decision on which alternative is most prudent, in compliance with the requirements of the HSIP program, and the funding provided under that program.

2. Consultations were completed by Caltrans with Kimley-Horn on the proposed roundabout design, the design facility, what was needed, what engineering decisions needed to be further developed, etc. All parties agreed that the roundabout design was feasible, that the basic design principles were within acceptable guidelines, and that the functionality and safety of the roundabout, if that is selected as the preferred alternative, would be acceptable.

3. A Reverse Crossing U-Turns (RCUT) alternative was developed, to include layouts and cost estimates, by the Design team. A RCUT turn would maintain the existing condition of requiring traffic to make a U-turn across live traffic, which was also considered as this alternative was evaluated. Because SR 49 is a high-speed facility, it was determined by the Project Development team that an acceleration lane, versus a loon, was needed to rejoin through traffic. The cost estimate was more than 30% over the lowest cost estimate and because this is a Highway Safety Improvement Program project, the RCUT alternative was rejected as not being feasible.

63. Bill Douglas

5-18-21

Mr. Sandeep Sandhu

Just a quick comment on the SR 49 project. I would definitely perfer roundabouts. I know a lot of people don't like them just because they're something different, but as you probably realize they have many advantages, they keep traffic flowing better, they're safer because you don't have the possibility of people running red lights or jumping greens, they're better for the enviorment and vehicles, by not having to come to a full stop, you have less brake and tire dust, less HC emmisions and better fuel milage and as an added bonus by your engineers own estimates they'll use less taxpayer money.

I'm glad to see you'll be ding something about those intersections, Lone Star is especially dangerous!

Thanking you in advance for your consideration

Sincerly

Bill Douglas

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

64	Submission Time	First Name	Last Name	Email	Phone
	2021-06-19T06:36:49Z	Ed	Goodson	egoodson@trustandprobatelawgroup.com	530-878-5846

Comment:
I just now learned of this project. I am writing to indicate my support for the roundabout solution.

Along with all the well-known advantages of roundabouts, a roundabout at Florence Lane will be essential in any wildfire evacuation of the Christian Valley area.

Regards,

--Ed

Caltrans Response:

Thank you for your comment. We appreciate your support and involvement in the project.

List of Technical Studies

Air Quality Report

Energy Analysis Report

Noise Study Report

Water Quality Assessment

Natural Environment Study

Floodplain Hydraulics Study

Historical Property Survey Report
- Archaeological Survey Report

Hazardous Waste Reports
- Initial Site Assessment

Visual Impact Assessment

Paleontological Identification Report

Community Impact Assessment