

State Route 49

NEV-49 Corridor Improvement Project

NEVADA COUNTY, CALIFORNIA
DISTRICT 3 – NEV – 49, (Post Mile 10.8/R13.3)
EA: 03-4E170
EFIS: 03 1500 0064

Draft Environmental Impact Report/Environmental Assessment



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.



August 2021

General Information about This Document

What's in this document:

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), has prepared this Environmental Impact Report/Environmental Assessment (EIR/EA), which examines the potential environmental impacts of the alternatives being considered for the proposed project located in Nevada County, California. Caltrans 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 we have 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.

What you should do:

- Please read the document.
- Additional copies of the document and the related technical studies are available for review at the Caltrans District 03 Office at 703 B Street, Marysville, CA and at the Nevada County Library at 980 Helling Way, Nevada City, CA, 95959, the Grass Valley Library, 207 Mill Street, Grass Valley, CA 95945, the Auburn Library, 350 Nevada Street, Auburn, CA 95603, and the Nevada County Offices (Public Kiosk - Main Lobby), 950 Maidu Avenue, Nevada City, CA 95959.
- 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>
- We'd like to hear what you think. If you have any comments regarding the proposed project, please attend the **virtual open house**, to be held on **Tuesday, September 7, 2021 from 6 p.m. to 7 p.m.** and/or send your written comments to Caltrans during the comment period: **August 25, 2021 – October 8, 2021.**
- **WEBEX:** Log in to view the virtual presentation at: <https://bit.ly/3fLUAq2>; a WebEx account is not required. Meeting number 1462 01 4661; passcode 49corridor. Listen in by phone at 1-408-418-9388. Please enter meeting number 146 2014661##.
WebEx phone attendees will not be able to view the presentation and will remain muted. Those wishing to ask questions are advised to utilize the conference call option.
- **CONFERENCE CALL:** Connect directly with a Caltrans staff member by dialing 1-888-570-6350, participant code 4170217. Please note that you will not be able to view the presentation or interact with presenters. A Caltrans staff member will be available to pass along any questions or comments. Community members will be able to ask questions or submit questions/concerns via email or postal mail

- Send comments via postal mail to:

Kristen Stubblefield
Caltrans D3
703 B Street, Marysville, CA 95901

- Send comments via email to: Nev.49@dot.ca.gov.
- Be sure to send comments by the deadline: October 8, 2021.

What happens next:

After comments are received from the public and reviewing agencies, Caltrans, as assigned by the FHWA, may: (1) give environmental approval to the proposed project, (2) do additional environmental studies, or (3) abandon the project. If the project is given environmental approval and funding is obtained, the Department could design and construct all or part of the project.

Alternative Formats:

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Department of Transportation, Attn: Stacie Gandy, EEO/Safety Office, 703 B Street, Marysville, CA 95901; (530) 218-0632 (Voice) or use the California Relay Service (800) 735-2929 (TTY to Voice), (800) 735-2922 (Voice to TTY) or 711.

FHWA Highway ID No.

SCH# 2020070281
D3/NEV/49 PM10.8/R13.3
EA: 4E170
EFIS: 03-1500-0064

The California Department of Transportation (Caltrans) proposes to improve safety, operations and mobility on State Route 49 between 0.1 mile north of La Barr Meadows Road (postmile 10.8) and McKnight Way (postmile R13.3)

DRAFT ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL ASSESSMENT

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

THE STATE OF CALIFORNIA
Department of Transportation

Responsible Agencies: California Transportation Commission and the Nevada County Transportation Commission

08/18/2021
Date

Mike Bartlett
Mike Bartlett
Environmental Analysis Office Chief
California Department of Transportation
NEPA Lead Agency

08/18/2021
Date

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Mike Bartlett
Environmental Analysis Office Chief
California Department of Transportation
CEQA Lead Agency

Summary

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 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 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). Caltrans is the lead agency under NEPA. Caltrans is also the lead agency under CEQA. In addition, FHWA's responsibility for 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 United States Code Section 327 (23 USC 327) and the Memorandum of Understanding dated December 23, 2016 and executed by FHWA and Caltrans.

Some impacts determined to be significant under CEQA may not lead to a determination of significance under NEPA. Because NEPA is concerned with the significance of the project as a whole, often a “lower level” document is prepared for NEPA. One of the most common joint document types is an Environmental Impact Report/Environmental Assessment (EIR/EA).

After receiving comments from the public and reviewing agencies, a Final EIR/EA will be prepared. Caltrans may prepare additional environmental and/or engineering studies to address comments. The Final EIR/EA will include responses to comments received on the Draft EIR/EA and will name the preferred alternative. If the decision is made to approve the project, a Notice of Determination will be published for compliance with CEQA, and Caltrans will decide whether

to issue a Finding of No Significant Impact (FONSI) or require an Environmental Impact Statement (EIS) for compliance with NEPA. A Notice of Availability (NOA) of the FONSI will be sent to the affected units of federal, state, and local government, and to the State Clearinghouse in compliance with Executive Order 12372.

Overview of Project Area

The scope of this project is encompassed by Segment 11 (NEV PM 0.00/R14.475) which is a 14.48 mile stretch of two- and four-lane conventional highway beginning at the Placer/Nevada County line and continuing north to the SR-20 junction in Grass Valley. This segment is a major roadway connecting Grass Valley and Nevada City with I-80 in Auburn to the south. It is the lifeline for much of Nevada County’s freight and lumber traffic and provides access to recreational attractions. This segment of SR-49 experiences AM and PM Peak Hour congestion and is currently operating at Level of Service E.

The City of Grass Valley proposes to extend the existing freeway south about one mile and has proposed a new interchange near Crestview and Smith Road as shown in the Grass Valley 2020 General Plan.

A Class III Bike Lane is proposed for the portion of SR-49 between Alta Sierra Drive and McKnight Way and is considered a priority route; however, shoulders along this stretch are inadequate. Any type of work done in this section will include shoulder widening consistent with Caltrans bikeway design standards. A number of improvement projects are included in this segment, including widening, intersection improvements, auxiliary lanes, repairing storm damage, and constructing a class III bicycle lane.

Past and future projects within or near the study area are listed in the table below:

Table S-1 Projects along SR-49

Name and Address	Jurisdiction	Status
03-3H820 McKnight Sink Hole	Nevada County	2018
03-0H220 Culvert Rehabilitation	Nevada County	2019
03-2A690 La Barr Meadows	Nevada County	2019
03-2H090 Nev 49 Super elevation	Nevada County	2020
03-3H510 Nevada 49 Safety	Nevada County	Future Project

Purpose

The purpose of this project is to improve operations, mobility, and safety of vehicular traffic, pedestrians, and cyclists on SR 49 by: 1) Constructing northbound and southbound Truck Climbing Lanes and segments of auxiliary lanes to improve operations, 2) Reducing the severity and frequency of collisions at public road intersections and roadways, 3) Reducing cross centerline collisions, 4) Bringing the roadway up to meet current design standards, 5) Providing a safe route for animals to cross the highway through a connection that would reduce the potential for animal and vehicle collisions, 6) Implementing identified improvements in the Nevada County Active Transportation Plan, which identifies SR 49 as planned for Class III bicycle facilities and notes the need for continuous standard shoulders.

Need

This segment of the SR-49 corridor experiences AM/PM peak hour congestion that impact operations and exacerbate safety issues. The SR 49 corridor is identified in the Caltrans California Freight Mobility Plan as a Tier 3 freight facility on the Highway Freight Network and the study identifies SR 49 as having a high deficiency for goods movement mobility in the base year, and in the no-build forecast. Due to hilly terrain in the project limits there are segments northbound and southbound with elevation gains that reduce truck speeds and create a need for truck climbing lanes to separate slower moving vehicles. Segments within the project limits have non-standard vertical curves that limit sight distance. Numerous access points along SR 49 create high-speed versus low-speed conflicting movements for local traffic accessing the highway. Lack of median and limited distance between travel lanes creates potential for crossover accidents. Lack of a safe way for animals to cross SR-49 within the project limits resulted in seven collisions involving animals (all deer) from January 2016 to December 2018. Existing shoulders do not meet design standards required to accommodate pedestrians, bicyclists, disabled vehicles, and enforcement activities.

Proposed Action

The project proposes to improve operations and mobility, which would improve safety on SR 49 in Nevada County from post mile 10.8 to R13.3 through the addition of northbound and southbound truck climbing lanes outside an urbanized area, 16-22 foot median with barrier, 10-foot shoulders, right turn lanes and two at-grade access-controlled intersections.

Two build alternatives have been developed for the project: **Alternative 3A (signals)** and **3B (roundabouts)**.

Under Alternatives 3A and 3B, SR 49 from La Barr Meadows Road/Allison Ranch Road to the Grass Valley city limits would be widened to have two lanes in the northbound direction, two lanes in the soundbound direction, and a median barrier. Frontage roads would be constructed

to connect Allison Ranch Road to Bethel Church Way and Smith Road to Taylorville Road at the Grass Valley city limits.

Joint CEQA/NEPA Document

The proposed project is subject to Federal and State environmental review requirements because Caltrans proposes the use of Federal funds from FHWA and/or the project requires an approval from FHWA. Project documentation, therefore, has been prepared in compliance with both CEQA and NEPA. Under CEQA, Caltrans is the lead agency. 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 USC 327 and the MOU dated December 23, 2016 and executed by FHWA and Caltrans. With NEPA Assignment, FHWA assigned and Caltrans assumed all of the 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 (CE) that FHWA assigned to Caltrans under the 23 USC 326 CE Assignment MOU, projects excluded by definition, and specific project exclusions.

After receiving comments from the public and reviewing agencies, a Final EIR/EA will be prepared. Caltrans may prepare additional environmental and/or engineering studies to address comments. The Final EIR/EA would include responses to comments received on the Draft EIR/EA and will name the preferred alternative. If the decision is made to approve the project, a Notice of Determination will be published for compliance with CEQA, and Caltrans will decide whether to issue a Finding of No Significant Impact (FONSI) or require an Environmental Impact Statement (EIS) for compliance with NEPA. A Notice of Availability (NOA) of the FONSI will be sent to the affected units of federal, state, and local government, and to the State Clearinghouse in compliance with Executive Order 12372.

Coordination with Agencies

Nevada County Transportation Commission

As the project sponsor, The Nevada County Transportation Commission (NCTC) has been involved in all stages of the planning and project development process; including, attending Project Development Team (PDT) and public meetings and interactions with external stakeholders.

Notice of Preparation

A Notice of Preparation (NOP) was published on July 14, 2020. It was filed with the State Clearinghouse and sent to the appropriate officials, agencies, and interested parties. A copy of the NOP is included in Appendix C, *Notice of Preparation*.

Necessary Permits and Approvals

In addition to the completion of CEQA and NEPA documentation and project approvals by the lead and responsible agencies, the following permits, licenses, agreements, and certifications (PLACs) are required for project construction

Table S-2 Permits and Approvals

Agency	PLAC	Status
United States Army Corps of Engineers	Section 404 Permit for filling or dredging waters of the United States	Application for Section 404 permit expected after FED approval.
California Department of Fish and Wildlife	1602 Agreement for Streambed Alteration	Applications for 1602 permit after FED approval.
California Water Resources Board	Water Discharge Permit	Application for Section 401 permit expected after FED approval.
Federal Highway Administration	Air Quality Conformity Determination	Request for determination to be submitted following selection of a preferred alternative/The Federal Highway Administration found that the project is consistent with the requirements of the Clean Air Act on December 3, 2012.
State Historic Preservation Officer	Finding of Effect (FOE)	FOE expected before FED.
California Transportation Commission	CTC vote to approve funds	Following the approval of the FED, the California Transportation Commission will be required to vote to approve funding for the project.
Air Pollution Control District (APCD) or Air Quality Management District (AQMD)	National Emissions Standards for Hazardous Air Pollutants (NESHAP) Notification	NESHAP notification may be needed pending the results from the Structural Survey during the Design phase.

Table S-3. Summary of Potential Impacts from Alternatives

Impact	Alternative 4 /No-Build	Alternative 3A	Alternative 3B	Avoidance, Minimization, and/or Mitigation Measures
HUMAN ENVIRONMENT				
Existing and Future Land Use				
Potential to change land use	No Effect	No Effect	No Effect	None required
Consistency With State, Regional and Local Plans				
Consistency with Nevada County General Plan	No Effect	Consistent	Consistent	None required
Consistency with Nevada County Regional Transportation Plan	No Effect	Consistent	Consistent	None required
Growth				
Potential to induce Growth	No Effect	Does not induce growth	Does not induce growth	None required
Relocations and Real Property Acquisition				
Effects on Relocation and Real Property Acquisitions	No Effect	37 single family units and 24 commercial properties would be acquired.	37 single family units and 24 commercial properties would be acquired.	Uniform Act
Environmental Justice				

Air	No Effect	Implementation of CSS minimization measures will reduce air quality impacts resulting from construction activities to the Environmental Justice community.	Implementation of CSS minimization measures will reduce air quality impacts resulting from construction activities to the Environmental Justice community.	Control measures will be implemented as specified in Caltrans 2018 Standard Specifications (CSS) Section 10-5 "Dust Control", Section 14-9 "Air Quality" and Section 18 "Dust Palliatives."
Noise	No Effect	Implementation of CSS minimization measures will reduce noise impacts resulting from short-term construction activities and long-term operational impacts to the Environmental Justice community.	Implementation of CSS minimization measures will reduce noise impacts resulting from short-term construction activities and long-term operational impacts to the Environmental Justice community.	<p>Caltrans intends to incorporate noise abatement in the form of (a) barrier(s). Calculations based on preliminary design data show that the barrier(s) will reduce noise levels by 5 to 7 dBA for 33 residences at a cost, no to exceed, \$3,531,000.</p> <p>Caltrans standard specifications include the requirement to minimize noise associated with construction by Caltrans Standard Specification Section 14-8.02 "Noise Control."</p>
Aesthetics	No Effect	Implementation of CSS minimization measures will reduce visual impacts resulting from construction activities to the Environmental Justice community.	Implementation of CSS minimization measures will reduce visual impacts resulting from construction activities to the Environmental Justice community.	If the project requires equipment/staging areas, then Caltrans' Special Provision Section 5.1 applies which indicates that the contractor would be responsible for securing locations for staging and storage. At the end of construction all areas used for staging, access, or other construction activities shall be repaired under Section 5-1.36 "Property and Facility Preservation."

Relocations and Real Property	No Effect	Implementation of mitigation measures will reduce relocation impacts to the Environmental Justice community.	Implementation of mitigation measures will reduce relocation impacts to the Environmental Justice community.	Any acquisitions and compensation to property owners would be consistent with the Uniform Act, as amended.
Traffic and Transportation/ Pedestrian and Bicycle Facilities				
Existing Operations (2018)	During the AM peak hour, SR 49 operates with LOS E conditions in the northbound direction and LOS D in the southbound direction. During the PM peak hour, all segments operate at LOS E conditions, and the PF is approximately the same – 80 to 85% – in both directions.	During the AM peak hour, SR 49 operates with LOS E conditions in the northbound direction and LOS D in the southbound direction. During the PM peak hour, all segments operate at LOS E conditions, and the PF is approximately the same – 80 to 85% – in both directions.	During the AM peak hour, SR 49 operates with LOS E conditions in the northbound direction and LOS D in the southbound direction. During the PM peak hour, all segments operate at LOS E conditions, and the PF is approximately the same – 80 to 85% – in both directions.	As part of construction, Caltrans will prepare and implement a TMP to avoid and minimize the potential impacts of the proposed project on temporary access and circulation caused by potential traffic delays during construction.
Horizon Year Operations (2044)	Operations would worsen due to increasing traffic volumes. All segments but one would worsen from LOS D to E in the northbound direction.	In the northbound direction, operations would improve conditions to LOS C or better during both peak hours. In the southbound direction, operations would provide LOS B or better conditions during the AM peak hour and LOS C conditions during the PM peak hour.	In the northbound direction, operations would improve conditions to LOS C or better during both peak hours. In the southbound direction, operations would provide LOS B or better conditions during the AM peak hour and LOS C conditions during the PM peak hour.	As part of construction, Caltrans will prepare and implement a TMP to avoid and minimize the potential impacts of the proposed project on temporary access and circulation caused by potential traffic delays during construction.

Visual/Aesthetics				
Effects on scenic resources, visual character and visual quality	No Effect	Although the proposed project will be widening the roadway and increasing the size of existing cut slopes and adding for fill slopes, the visual character and quality of the proposed project will be compatible, after visual recommended measures are implemented, with the visual character and quality of the existing roadway corridor.	Although the proposed project will be widening the roadway and increasing the size of existing cut slopes and adding for fill slopes, the visual character and quality of the proposed project will be compatible, after visual recommended measures are implemented, with the visual character and quality of the existing roadway corridor.	Protect landscape features where feasible; all disturbed areas shall be regraded to preconstruction conditions; If the project requires equipment/staging areas, then Caltrans' Special Provision Section 5.1 applies which indicates that the contractor would be responsible for securing locations for staging and storage. At the end of construction all areas used for staging, access, or other construction activities shall be repaired under Section 5-1.36 "Property and Facility Preservation.
Cultural Resources				
Effects on cultural resources	No Effect	Although the project will affect a small portion of the Berriman Ranch and Bear River Lumbermill/Bullion Gold Mine, the portions of the sites within the ADI for the proposed project do not retain sufficient integrity to convey the significance of the resources and would not diminish the ability of those resources to convey their importance for inclusion on the NRHP/CHL. Pending SHPO concurrence with the Finding of No Adverse Effect without Standard Conditions ESA.	Although the project will affect a small portion of the Berriman Ranch and Bear River Lumbermill/Bullion Gold Mine, the portions of the sites within the ADI for the proposed project do not retain sufficient integrity to convey the significance of the resources and would not diminish the ability of those resources to convey their importance for inclusion on the NRHP/CHL. Pending SHPO concurrence with the Finding of No Adverse Effect without Standard Conditions ESA.	None required
PHYSICAL ENVIRONMENT				
Water Quality and Storm Water Runoff				
Increased runoff from added impervious surfaces	No Effect	Addition of new impervious surfaces	Addition of new impervious surfaces	The proposed project would be designed in accordance with NPDES Permit requirements

Water quality impacts during construction and operation	No Effect	Potential for short-term discharges during construction	Potential for short-term discharges during construction	Projects having one acre of more of new impervious area require permanent treatment BMP consideration. While the implementation of permanent treatment BMPs meant to target specific TMDLs is not anticipated for this project, the selection of BMPs (by Design staff) will likely include "General Purpose BMPs" selected from Matrix-A of Caltrans' Project Planning Design Guide (PPDG).
Hazardous Waste and Materials				
Exposure to hazardous materials to humans or the environment	No Effect	Potential exposure from hazardous conditions from accidental release of hazardous materials during construction; Potential exposure of harmful chemicals from construction activities; Risk of encountering contaminated soil and exposure to hazardous chemicals	Potential exposure from hazardous conditions from accidental release of hazardous materials during construction; Potential exposure to harmful chemicals from construction activities; Risk of encountering contaminated soil and exposure to hazardous chemicals	Avoid and Minimize the Potential for Effects from Hazardous Waste or Materials during Project Construction; Conduct Sampling, Testing, Removal, Storage, Transportation, and Disposal of Yellow/White Traffic Striping along Existing Roadways; Perform Soil Testing and Dispose of Contaminated Soils Appropriately; Develop a Lead Compliance Plan; Develop and Implement Plans to Address Worker Health and Safety
Air Quality				
Regional Conformity	No Effect	This project is exempt from regional conformity requirements 40 CFR 93.127	This project is exempt from regional conformity requirements 40 CFR 93.127	None required
Project-level conformity (CO, PM _{2.5} , PM ₁₀ and NAAQS)	No Effect	The proposed project does not require a project-level PM and/or CO hotspot analysis, since it is in the unclassified/attainment area for National PM and CO Standards. Therefore, the interagency consultation process for the project-level PM and/or CO hotspot analysis does not apply.	The proposed project does not require a project-level PM and/or CO hotspot analysis, since it is in the unclassified/attainment area for National PM and CO Standards. Therefore, the interagency consultation process for the project-level PM and/or CO hotspot analysis does not apply.	None required

Interagency Consultation Review (ICR)	No Effect	NCTC completed an Interagency Consultation Review (ICR) in order to evaluate if it is a regionally significant project. The project obtained concurrence from EPA, FHWA, NSAQMD, and Caltrans that the proposed project is not a regionally significant project on June 22, 2020, June 23, 2020, June 15, 2020, and June 23, 2020, respectively.	NCTC completed an Interagency Consultation Review (ICR) in order to evaluate if it is a regionally significant project. The project obtained concurrence from EPA, FHWA, NSAQMD, and Caltrans that the proposed project is not a regionally significant project on June 22, 2020, June 23, 2020, June 15, 2020, and June 23, 2020, respectively.	None required
Construction	No Effect	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, NO _x , ROG, directly emitted PM ₁₀ and PM _{2.5} , 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.	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, NO _x , ROG, directly emitted PM ₁₀ and PM _{2.5} , 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.	Contractor shall comply with the Caltrans' Standard Specification 14-9; Implement Dust Control Measures; Adhere to NSAQMD Rule 226 (Fugitive Dust Emissions); Implement Fugitive Dust Control Plan
Noise and Vibration				

Traffic Noise	No Effect	The traffic noise modeling results indicate that noise levels are predicted to exceed the noise abatement criteria at ST-1 (Tall Pines Estates area); therefore, traffic noise impacts are anticipated, and noise abatement must be considered.	The traffic noise modeling results indicate that noise levels are predicted to exceed the noise abatement criteria at ST-1 (Tall Pines Estates area); therefore, traffic noise impacts are anticipated, and noise abatement must be considered.	Caltrans intends to incorporate noise abatement in the form of (a) barrier(s). Calculations based on preliminary design data show that the barrier(s) will reduce noise levels by 5 to 7 dBA for 33 residences at a cost, no to exceed, \$3,531,000.
Construction Noise	No Effect	No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 14.8-02.	No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 14.8-02.	Contractor shall comply with the Caltrans' Standard Specification 14-8.02, Noise Control
Energy				
Energy Demands	No Effect	Temporary energy consumption during construction from the use of construction equipment	Temporary energy consumption during construction from the use of construction equipment	None required
Natural Communities				
Effects on Natural Communities	No Effect	No Effect	No Effect	None required
Wetlands and Other Waters				
Effects on Wetlands and Other Waters	No Effect	Permanent loss of up to 0.37-acres and temporary impacts to due project construction; All areas temporarily disturbed would be restored to pre-construction conditions.	Permanent loss of up to 0.41-acres and temporary impacts to due project construction; All areas temporarily disturbed would be restored to pre-construction conditions.	Caltrans will purchase mitigation credits through the In-Lieu Fee Program. If credits from In-Lieu Fee Program are not available, Caltrans will purchase credits from an approved Mitigation Bank.
Plant Species				
Effects on Plant Species	No Effect	No Effect	No Effect	None required
Animal Species				
Effects on Deer Migration	Collisions between vehicles and	The width of the highway through shoulder widening and the	The width of the highway through shoulder widening and	Caltrans intends to install one to two wildlife crossings that will be

	animals would continue unabated.	addition of one or two lanes (depending on alternative chosen) will increase the distance deer must travel to cross SR 49. This widening may increase animal vehicle collisions.	the addition of one or two lanes (depending on alternative chosen) will increase the distance deer must travel to cross SR 49. This widening may increase animal vehicle collisions.	approximately a 12-foot by 12-foot box culvert under SR 49.
Threatened and Endangered Species				
Effects on CRLF	No Effect	This species is not anticipated to be present within the project area; therefore, no avoidance and minimization measures will be required.	This species is not anticipated to be present within the project area; therefore, no avoidance and minimization measures will be required.	Caltrans will incorporate BMPs to protect aquatic features.
Invasive Species				
Effects on Invasive Species	No Effect	The proposed project would create additional disturbed areas that would be more susceptible to colonization or spread by invasive plants	The proposed project would create additional disturbed areas that would be more susceptible to colonization or spread by invasive plants	Caltrans will incorporate BMPs to minimize the spread of invasive plants.
Climate Change				
Effects on Climate Change	Due to state emission control programs, CO ₂ would decrease from existing conditions.	GHG emissions would decrease by opening (2024) and horizon (2044) year conditions for all project alternatives due to planned improvements in fuel efficiency and anticipated changes to alternate fuels (such as, electric vehicles). Under horizon year (2044) conditions, the build alternatives would have less GHG emissions than the no build alternative.	GHG emissions would decrease by opening (2024) and horizon (2044) year conditions for all project alternatives due to planned improvements in fuel efficiency and anticipated changes to alternate fuels (such as, electric vehicles). Under horizon year (2044) conditions, the build alternatives would have less GHG emissions than the no build alternative.	Nevada County Regional Transportation Plan (RTP) [2015-2035] outlines GHG Reduction measures to achieve a 2.5% reduction of GHG emissions per year over the twenty-year planning period (50 percent).

Table S-4 Summary of CEQA Impacts

Impact	Significance before Mitigation			Mitigation Measures	Significance after Mitigation		
	No Build	Alt. 3A	Alt. 3B		No Build	Alt. 3A	Alt. 3B
Aesthetics							
a) Have a substantial adverse effect on a scenic vista	NA	LTS	LTS	NA	NA	NA	NA
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	NA	No Impact	No Impact	NA	NA	NA	NA
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	NA	LTS	LTS	NA	NA	NA	NA
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area	NA	No Impact	No Impact	NA	NA	NA	NA
Agriculture and Forest Resources							
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	NA	No Impact	No Impact	NA	NA	NA	NA
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract	NA	No Impact	No Impact	NA	NA	NA	NA
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))	NA	No Impact	No Impact	NA	NA	NA	NA
d) Result in the loss of forest land or conversion of forest land to non-forest use	NA	No Impact	No Impact	NA	NA	NA	NA
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	NA	No Impact	No Impact	NA	NA	NA	NA
Air Quality							
a) Conflict with or obstruct implementation of the applicable air quality plan	NA	LTS	LTS	NA	NA	NA	NA
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	NA	LTS	LTS	NA	NA	NA	NA
c) Expose sensitive receptors to substantial pollutant concentrations	NA	LTS	LTS	NA	NA	NA	NA
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people	NA	LTS	LTS	NA	NA	NA	NA

*LTS=Less Than Significant

Impact	Significance before Mitigation			Mitigation Measures	Significance after Mitigation		
	No Build	Alt. 3A	Alt. 3B		No Build	Alt. 3A	Alt. 3B
Biological Resources							
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 Game or U.S. Fish and Wildlife Service	NA	No Impact	No Impact	NA	NA	NA	NA
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 Game or US Fish and Wildlife Service	NA	LTS	LTS	NA	NA	NA	NA
c) Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means	NA	LTS	LTS	NA	NA	NA	NA
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	NA	LTS	LTS	NA	NA	NA	NA
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	NA	No Impact	No Impact	NA	NA	NA	NA
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	NA	No Impact	No Impact	NA	NA	NA	NA
Cultural Resources							
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5	NA	LTS w/ Mitigation	LTS w/ Mitigation	ESA	NA	No Impact	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5	NA	LTS w/ Mitigation	LTS w/ Mitigation	ESA	NA	No Impact	No Impact
c) Disturb any human remains, including those interred outside of dedicated cemeteries	NA	LTS	LTS	NA	NA	NA	NA
Energy							
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation	NA	No Impact	No Impact	NA	NA	NA	NA
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	NA	No Impact	No Impact	NA	NA	NA	NA

*LTS=Less Than Significant

Impact	Significance before Mitigation			Mitigation Measures	Significance after Mitigation		
	No Build	Alt. 3A	Alt. 3B		No Build	Alt. 3A	Alt. 3B
Geology and Soils							
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 ii) Strong seismic ground shaking iii) Seismic-related ground failure, including liquefaction iv) Landslides	NA	No Impact	No Impact	NA	NA	NA	NA
b) Result in substantial soil erosion or the loss of topsoil	NA	LTS	LTS	NA	NA	NA	NA
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	NA	No Impact	No Impact	NA	NA	NA	NA
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property	NA	LTS	LTS	NA	NA	NA	NA
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 waste water	NA	No Impact	No Impact	NA	NA	NA	NA
f) directly or indirectly destroy a unique paleontological resource or site of unique geologic feature	NA	No Impact	No Impact	NA	NA	NA	NA
Greenhouse Gas Emissions							
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment	NA	LTS	LTS	NA	NA	NA	NA
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases	NA	No Impact	No Impact	NA	NA	NA	NA
Hazards and Hazardous Materials							
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	NA	LTS	LTS	NA	NA	NA	NA
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	NA	LTS	LTS	NA	NA	NA	NA
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school	NA	No Impact	No Impact	NA	NA	NA	NA

*LTS=Less Than Significant

Impact	Significance before Mitigation			Mitigation Measures	Significance after Mitigation		
	No Build	Alt. 3A	Alt. 3B		No Build	Alt. 3A	Alt. 3B
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	NA	No Impact	No Impact	NA	NA	NA	NA
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 for people residing or working in the project area	NA	No Impact	No Impact	NA	NA	NA	NA
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	NA	No Impact	No Impact	NA	NA	NA	NA
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires	NA	No Impact	No Impact	NA	NA	NA	NA
Hydrology and Water Quality							
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality	NA	LTS	LTS	NA	NA	NA	NA
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin	NA	LTS	LTS	NA	NA	NA	NA
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: <ul style="list-style-type: none"> i. result in substantial erosion or siltation on- or off-site; ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; 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 iv. impede or redirect flood flows 	NA	LTS	LTS	NA	NA	NA	NA
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation	NA	No Impact	No Impact	NA	NA	NA	NA
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan	NA	LTS	LTS	NA	NA	NA	NA
Land Use and Planning							
a) Physically divide an established community	NA	No Impact	No Impact	NA	NA	NA	NA
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	NA	No Impact	No Impact	NA	NA	NA	NA

*LTS=Less Than Significant

Impact	Significance before Mitigation			Mitigation Measures	Significance after Mitigation		
	No Build	Alt. 3A	Alt. 3B		No Build	Alt. 3A	Alt. 3B
Mineral Resources							
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	NA	No Impact	No Impact	NA	NA	NA	NA
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	NA	No Impact	No Impact	NA	NA	NA	NA
Noise							
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	NA	LTS w/ Mitigation	LTS w/ Mitigation	Noise Barrier	NA	LTS	LTS
b) Generation of excessive groundborne vibration or groundborne noise levels	NA	LTS w/ Mit	LTS w/ Mit	Noise Barrier	NA	LTS	LTS
c) For a project within the vicinity of a private airstrip or an airport land use plan, or where such a plan has 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	NA	No Impact	No Impact	NA	NA	NA	NA
Population and Housing							
a) Induce substantial 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)	NA	No Impact	No Impact	NA	NA	NA	NA
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere	NA	LTS w/ Mit	LTS w/ Mit	Relocation Assistance	NA	LTS	LTS
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: <ul style="list-style-type: none"> ● Fire protection ● Police protection ● Schools ● Parks ● Other public facilities 	NA	No Impact	No Impact	NA	NA	NA	NA

*LTS=Less Than Significant

Impact	Significance before Mitigation			Mitigation Measures	Significance after Mitigation		
	No Build	Alt. 3A	Alt. 3B		No Build	Alt. 3A	Alt. 3B
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	NA	No Impact	No Impact	NA	NA	NA	NA
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	NA	No Impact	No Impact	NA	NA	NA	NA
Transportation/Traffic							
a) Conflict with an applicable plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities	NA	No Impact	No Impact	NA	NA	NA	NA
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)	NA	LTS w/ Mit	LTS w/ Mit	Multi-modal policy initiatives	NA	LTS	LTS
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)	NA	No Impact	No Impact	NA	NA	NA	NA
d) Result in inadequate emergency access	NA	No Impact	No Impact	NA	NA	NA	NA
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) 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	NA	No Impact	No Impact	NA	NA	NA	NA
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.	NA	No Impact	No Impact	NA	NA	NA	NA
Utilities and Service Systems							

*LTS=Less Than Significant

a) Require or result in the construction of new or expanded water, wastewater treatment facilities or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects	NA	LTS	LTS	NA	NA	NA	NA
b) Have sufficient water supplies available to serve the project reasonably foreseeable future development during normal, dry and multiple dry years	NA	No Impact	No Impact	NA	NA	NA	NA
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	NA	No Impact	No Impact	NA	NA	NA	NA
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	NA	LTS	LTS	NA	NA	NA	NA
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste	NA	No Impact	No Impact	NA	NA	NA	NA
Wildfire							
a) Substantially impair an adopted emergency response plan or emergency evacuation plan	NA	No Impact	No Impact	NA	NA	NA	NA
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	NA	No Impact	No Impact	NA	NA	NA	NA
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	NA	No Impact	No Impact	NA	NA	NA	NA
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	NA	No Impact	No Impact	NA	NA	NA	NA
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	NA	LTS	LTS	NA	NA	NA	NA

*LTS=Less Than Significant

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)	NA	No Impact	No Impact	NA	NA	NA	NA
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly	NA	LTS w/ Mit	LTS w/ Mit	Noise Barrier; ESA Fencing; Uniform Act; Multi-modal policy	NA	LTS	LTS

LTS = Less than Significant
NA = Not Applicable

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List of Abbreviated Terms

A

AADT: average annual daily traffic
AASHTO: American Association of State Highway and Transportation Officials
AB: Assembly Bill
ACHP: Advisory Council on Historic Preservation
ADA: Americans with Disabilities Act
ADL: aerially deposited lead
ADT: average daily traffic
AE: Adverse Effect
AEP: Associate Environmental Planner
AEPNS: Associate Environmental Planner, Natural Science
APE: Area of Potential Effects
AQMD: Air Quality Management District
ARB: Air Resources Board
ASR: Archaeological Survey Report

B

BA: Biological Assessment
BMP: Best Management Practice
BO: Biological Opinion

C

CAA: Clean Air Act
Cal/EPA: California Environmental Protection Agency
CAA: California Clean Air Act
CCR: California Code of Regulations
CDFW: California Department of Fish and Wildlife
CEQ: Council on Environmental Quality
CEQA: California Environmental Quality Act
CESA: California Endangered Species Act
CFR: Code of Federal Regulations
CIA: Community Impact Assessment
CNDDDB: California Natural Diversity Database
CNPS: California Native Plant Society
CO: carbon monoxide
CO₂: carbon dioxide
COZEPP: Construction Zone Enhanced Enforcement Program
CPRA: California Public Records Act
CRHR: California Register of Historical Resources
CSO: Cultural Studies Office

CT: California Department of Transportation
CTC: California Transportation Commission
CWA: Clean Water Act

D

dBA: A-weighted decibel
dBA Leq: A-weighted noise level
DBH: Diameter at breast height
DED: draft environmental document
DEIR: Draft Environmental Impact Report (CEQA)
DOT: Department of Transportation
DPR: Draft Project Report
DSA: Disturbed Soil Area
DSI: Detailed Site Investigation
DTSC: California Department of Toxic Substances Control
DWR: California Department of Water Resources

E

EA: Environmental Assessment [NEPA]
EA: Expenditure Authorization
ECL: Environmental Construction Liaison/Coordinator
ECR: Environmental Commitments Record
ED: environmental document
EIR: Environmental Impact Report [CEQA]
EJ: Environmental Justice
EO: Executive Order
EOC: Environmental Office Chief
EPNS: Environmental Planner (Natural Science)
ESA: Environmentally Sensitive Area
ESA: Endangered Species Act
ESR: Environmental Study Request

F

FAE: Finding of Adverse Effect
FED: final environmental document
FEIR: Final Environmental Impact Report (CEQA)
FEMA: Federal Emergency Management Agency
FESA: Federal Endangered Species Act
FHWA: Federal Highway Administration
FIRM: Flood Insurance Rate Map

FIS: Flood Insurance Study
FOE: Finding of Effect
FOIA: Freedom of Information Act
FONSI: Finding of No Significant Impact [NEPA]
FR: Federal Register
FSTIP: Federal State Transportation Improvement Program
FTIP: Federal Transportation Improvement Program
FY: Fiscal Year

G

GHG: greenhouse gas
GIS: Geographic Information Systems

H

HAER: Historic American Engineering Record
HASR: Historic Architectural Survey Report
HCM: Highway Capacity Manual
HCP: Habitat Conservation Plan
HDM: Highway Design Manual
HOV: High-Occupancy Vehicle
HPSR: Historic Property Survey Report
HRER: Historical Resources Evaluation Report

I

IIP: Interregional Improvement Program
IPCC: Intergovernmental Panel on Climate Change
ISA: Initial Site Assessment
ISTEA: Intermodal Surface Transportation Efficiency Act of 1991
ITIP: Interregional Transportation Improvement Program
ITP: Incidental Take Permit

J

JD: Jurisdictional Determination

K

L

LEDPA: Least Environmentally Damaging Practicable Alternative

LOS: Level of Service
LUST: leaking underground storage tank

M

MAP-21: Moving Ahead for Progress in the 21st Century Act
MBTA: Migratory Bird Treaty Act
MOA: Memorandum of Agreement
MOU: Memorandum of Understanding
MPO: Metropolitan Planning Organization
MS4: Municipal Separate Storm Sewer System
MSAT: Mobile Source Air Toxics
MTP: Metropolitan Transportation Plan
MTIP: Metropolitan Transportation Improvement Program

N

NAAQS: National Ambient Air Quality Standards
NAC: Noise Abatement Criteria
NADR: Noise Abatement Decision Report
NAHC: Native American Heritage Commission
NEPA: National Environmental Policy Act
NES: Natural Environment Study
NES-MI: Natural Environment Study (Minimal Impact)
NESHAP: National Emissions Standards for Hazardous Air Pollutants
NRHP: National Register of Historic Places
NSSP: Nonstandard Special Provision
NWP: Nationwide Permit
NFIP: National Flood Insurance Program
NHL: National Historic Landmark
NHPA: National Historic Preservation Act
NHS: National Highway System
NOA: naturally occurring asbestos
NOAA: National Oceanic and Atmospheric Administration
NOC: Notice of Completion
NOD: Notice of Determination
NOI: Notice of Intent
NOP: Notice of Preparation
NOx: nitrogen oxide
NPDES: National Pollutant Discharge Elimination System

O

O.C.: Overcrossing
OHP: [California] Office of Historic Preservation
OHWM: Ordinary High-Water Mark
OPR: [California] Office of Planning and Research

P

PA: Programmatic Agreement
PA&ED: Project Approval and Environmental Document
Pb: lead
PDPM: [Caltrans] Project Development Procedures Manual
PDT: Project Development Team
PE: Project Engineer
PEAR: Preliminary Environmental Assessment Report
PEER: Permit Engineering Evaluation Report
PID: Project Initiation Document
PLAC: Permits, Licenses, Agreements, and Certifications
PM: particulate matter
PM: post mile
PM: Project Manager
PM₁₀: particulate matter less than 10 microns in diameter
PM_{2.5}: particulate matter less than 2.5 microns in diameter
POAQC: Project of Air Quality Concern
ppb: parts per billion
ppm: parts per million
PR: Project Report
PRC: [California] Public Resources Code
PS&E: Plans, Specifications, and Estimates
PSI: Preliminary Site Investigation
PSI: pounds per square inch
PSR: Project Study Report
PSR-PDS: Project Study Report-Project Development Support
PSSR: Project Scope Summary Report

Q

R

RAP: Relocation Assistance Program
RE: Resident Engineer
RIP: Regional Improvement Program
ROD: Record of Decision [NEPA]
ROW: right-of-way

RTIP: Regional Transportation Improvement Program
RTP: Regional Transportation Plan
RTPA: Regional Transportation Planning Agency
RWQCB: Regional Water Quality Control Board

S

SAFETEA-LU: Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SB: Senate Bill
SCH: [California] State Clearinghouse
SHL: State Historical Landmark
SHOPP: State Highway Operation and Protection Program
SHPO: State Historic Preservation Officer
SHS: State Highway System
SI: Safety Index
SIP: State Implementation Plan
SOC: Statement of Overriding Considerations [CEQA]
SR: State Route
SSP: Standard Special Provision
STIP: Statewide Transportation Improvement Program
SWMP: Storm Water Management Plan
SWPPP: Storm Water Pollution Prevention Plan
SWRCB: State Water Resources Control Board

T

TASAS: Traffic Accident Surveillance and Analysis System
TCP: Traditional Cultural Property or Place
TCR: Transportation Concept Report
TDM: Transportation Demand Management
TEA-21: Transportation Equity Act for the 21st Century
TeNS: Technical Noise Supplement
THPO: Tribal Historic Preservation Officer
TMDL: Total Maximum Daily Load
TMP: Traffic Management Plan
TSM: Transportation Systems Management

U

U.C.: Undercrossing
U.S. EPA: United States Environmental Protection Agency

USACE: United States Army Corps of Engineers
USC: United States Code
USDOT: United States Department of Transportation
USFWS: United States Fish and Wildlife Service
UST: underground storage tanks

V

VMT: Vehicle Miles of Travel
VOC: volatile organic compounds

W

WPCP: Water Pollution Control Program

X

Y

Z

Chapter 1. Proposed Project

Chapter 1

1.1. INTRODUCTION

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 operations and mobility on SR 49 in Nevada County from post mile 10.8 to R13.3 through the addition of northbound and southbound truck climbing lanes outside an urbanized area, 16-22-foot median with barrier, 10-foot shoulders, right turn lanes and two at-grade access-controlled intersections.

This project is funded through the Caltrans' State Transportation Improvement Program (STIP) under the funding source 20.XX.075.600. Nevada County Transportation Commission (NCTC) programmed funds from their Regional Improvement Program (RIP) under the 2020 STIP as follows:

- \$3,900,000 for Project Approval and Environmental Documentation (PA&ED)
- \$3,000,000 for Plans, Specifications, & Estimates (PS&E)
- \$1,200,000 for Right-of-Way Support in Fiscal Year (FY) 2021/22

NCTC anticipates \$30,840,000 of RIP and \$37,960,000 of Interregional Improvement Program (IIP) funding from future cycles (FY 2021/22 through FY 2040/41) to complete funding of Alternative 3.

SR 49 acts as a lifeline route to several communities in Nevada, Placer, and Sierra Counties, and is the major interregional state highway connecting to the Interstate 80 gateway. This project is the top regional priority of Nevada County Transportation Commission (NCTC) and strong local support exists for improvements that will increase safety and improve operations on SR 49, which has a history accidents and fatalities in the corridor. The project segment serves as the gateway to the City of Grass Valley, the economic hub of western Nevada County. Volumes of both local traffic, interregional, and goods movement freight traffic have increased, and the State highway facility have become an integral part of the local circulation system in addition to serving tourist, goods movement, and interregional traffic. It is estimated that 30% of the County work force is using this route as a primary commute route to major employment centers outside of the County, resulting in over-capacity traffic demand during peak commute periods. The

corridor also provides a key connection to specialized medical services provided outside Nevada County, access to higher education institutions, and access to goods and services within and outside of the county.

Tourism traffic that is important to the regional and state economy increase congestion and exacerbate safety issues throughout the year. The 2014 Bay to Tahoe Basin Tourism Impact Study indicated that during the summer peak tourism season approximately 34% of the traffic on SR 49 is tourism related traffic. Tourism spending over the ten-year study period showed steady increase of tourism spending in Nevada County and indicated that the City of Grass Valley has experienced a strong Transient Occupancy Tax (TOT) collection growth of 15% per year. It is reasonable to assume that as tourism increases and associated traffic increases, increases in tourism related traffic contribute to the further deterioration of Level of Service (LOS) for SR 49, which currently operates at LOS E during peak periods.

The SR 49 corridor also plays a key role in providing interregional multi-modal connectivity as an interregional public transit corridor, providing Gold Country Connects (formerly Gold Country Stage) Route 5 express fixed route transit service between Nevada and Placer County and connections to the Amtrak Capital Corridor Inner-City Passenger Rail, Auburn Transit, and Placer County Transit at the Auburn Conheim Multimodal Station in Auburn. Gold Country Connects Route 5 passengers can transfer to Placer County Transit, which provides access to the Watt Ave. Light Rail Station or via Amtrak Thruway buses access the Capitol Corridor to Sacramento and the Bay Area.

The SR 49 corridor is identified as a Strategic Interregional Corridor in the Caltrans 2015 Interregional Transportation Strategic Plan and the Caltrans California Freight Mobility Plan as a Tier 3 freight facility on the Highway Freight Network and is designated as a terminal access route for Surface Transportation Assistance Act trucks. The 2015 Caltrans District 3 Goods Movement Study identifies SR 49 as having a high deficiency for goods movement mobility in the base year, and the no-build forecast.

The project segment is officially designated by FHWA as a Critical Rural Freight Corridor under 23 U.S.C. 167(g). Both SR 20 and SR 49 are utilized in combination as an Emergency Detour Route when Interstate 80 between Emigrant Gap and Colfax is closed due to major accidents, wildfires, maintenance activities, and construction; and both are designated to handle STAA oversize and CA Legal Trucks. Anytime Interstate 80 is closed north of Colfax, truck traffic and passenger vehicles can be detoured onto SR 20 to SR 49 and back onto I-80. When I-80 is closed south of Colfax truck traffic and passenger vehicles can be detoured onto SR 174 connecting them to SR 20/SR 49 and back onto I-80. Data collected by the Caltrans District 3 Traffic Management Center indicate that between 2004 and 2014 there were 188 closures of Interstate 80 where truck traffic and passenger vehicles were rerouted onto SR 20 and SR 49. Estimates indicate \$4 to \$8 million dollars of commerce travel over I-80 at Donner Pass every hour.

1.2. PURPOSE AND NEED

1.2.1. Purpose

- (1) Improve operations resulting from AM/PM hour congestion.
- (2) Improve goods mobility in the project area.
- (3) Reduce the severity and frequency of collisions at public road intersections and roadways.
- (4) Reduce cross-centerline collisions.
- (5) Modify the existing roadway to meet current design standards.
- (6) Address reduced truck speeds resulting from increasing roadway elevations in both directions.
- (7) Provide a safe route for animals to cross the highway that would reduce the potential for animal/vehicle collisions.
- (8) Implement improvements identified in the Nevada County Active Transportation Plan for SR 49, including Class III bicycle facilities and continuous standard shoulders.

1.2.2. Need

- (1) This segment of the SR-49 corridor experiences AM/PM peak hour congestion that impacts operations.
- (2) The SR 49 corridor is identified in the Caltrans California Freight Mobility Plan as a Tier 3 freight facility on the Highway Freight Network and the plan identifies SR 49 as having a high deficiency for goods movement mobility in the base year, and in the no-build forecast.
- (3) Numerous access points along SR 49 create high-speed versus low-speed conflicting movements for local traffic accessing the highway.
- (4) The absence of a median and limited distance between travel lanes creates potential for crossover accidents.
- (5) Segments of the road have curves that limit sight distance.

- (6) Due to hilly terrain in the project limits, there are segments northbound and southbound with increasing elevation which reduces truck speeds.
- (7) Lack of a safe way for animals to cross SR-49 within the project limits resulted in seven collisions involving animals (all deer) from January 2016 to December 2018.
- (8) Existing shoulders do not meet design standards required to accommodate pedestrians, bicyclists, disabled vehicles, and law enforcement activities.

1.2.3. Level of Service:

Level of Service (LOS) is a qualitative measure of traffic operating conditions (**Table 1-1**) that assigns a letter rating, from A (the best) to F (the worst). These ratings represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. LOS D is identified as the target LOS for this segment of SR 49. For this project, a project impact occurs when:

- a highway segment or an intersection worsens from LOS D or better under the no-build alternative to LOS E or worse under a build alternative or
- the operational performance worsens for a highway segment or at an intersection operating at LOS E or worse under the no-build alternative.

Table 1-1. Level of Service (LOS)

LOS	Description	AS ¹	PF ²
A	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to pass.	> 55	≤ 35
B	Operating speeds are high. The limitations in passing becomes noticeable	> 50 to 55	> 35 to 50
C	Operating speeds are noticeably lower than free-flow speed and most vehicles travel in platoons.	> 45 to 50	> 50 to 65
D	Vehicle platooning increases, but passing opportunities are limited.	> 40 to 45	> 65 to 80
E	Operation is approaching capacity. There are virtually no passing opportunities. Speeds are severely curtailed.	< 35	> 80
F	Represents a breakdown in flow with unstable operating conditions.	$v/c > 1^3$	

Notes: 1. AS, average speed, is reported in miles per hour.
2. PF, percent followers, is reported as a percentage.
3. Volume-to-capacity ratio is greater than 1 (demand exceeds capacity).
Source: *Highway Capacity Manual, 6th Edition* (Transportation Research Board, 2019)

Within the project limits, existing conditions during the AM peak hour result in SR 49 operating with LOS E conditions in the northbound direction and LOS D in the southbound direction. During the PM peak hour, all segments operate at LOS E conditions.

Traffic Collisions:

Based on a Selective Collision Rate Calculation done by District 3's Office of Traffic Safety, a total of 62 collisions were reported within this project's limits from January 1, 2016 to December 31, 2018 as shown in **Table 1-2**. During this period, the reported collisions were as follows:

- 48 percent were rear-end or side swipes
- 21 percent were hit objects
- 13 percent other accident types

In the three-year period, 62 collisions occurred with no fatalities. The fatality and injury collision rate is less than the statewide average for similar facilities although the actual total collision rate is approximately the same as the corresponding statewide average. Notably, neither the actual fatality collision rate nor the fatality and injury collision rate exceed their respective statewide average collision rates.

Table 1-2 below is the collision rate summary for the project.

Table 1-2. Three-Year Collision Data

Segment	Total Collisions	Total Fatality Collisions	Total Injury Collisions	Total Fatality and Injury Collisions	Actual Collision Rate ¹			Average Collision Rate ¹		
					F	F&I	Total	F	F&I	Total
SR 49 (PM 11.1 to 13.3) ¹	62	0	21	21	0.000	0.34	1.00	0.014	0.42	1.02

Notes: The collision rate is in collisions per million vehicle-miles. "F" refers to the fatality collision rate, and "F&I" refers to the fatality and injury collision rate.
 1. The PM limits correspond to 0.5 mile north of La Barr Meadows Road/Allison Ranch Road to 0.4 mile south of McKnight Way.
 Source: TASAS Table B Summary from January 2016 to December 2018, Caltrans (2019)

1.2.4. Independent Utility and Logical Termini

Federal Highway Administration (FHWA) regulations (23 Code of Federal Regulations [CFR] 771.11[f]) require that the action shall:

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 useable and be a reasonable expenditure even if no additional transportation improvements in the area are made); and,
3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

This project does not require the completion of other projects to be a functioning and a stand-alone project, therefore, the project has independent utility.

Logical termini is defined as (1) rational end points for a transportation improvement, (2) rational end points for a review of the environmental impacts.

The project starts from 0.1 mile north of La Barr Meadows Road to McKnight Way, outside the Grass Valley city limits. At La Barr Meadows Road, the project would tie-in to the La Barr Meadows Project (EA 03-2A690) completed in 2014. The points at which the project begins and ends make sense given the scope of work and environmental impacts studied within and/or adjacent to the project are broad enough to encompass the project as a whole. Intersections, connecting streets and driveways within the project area would not require an additional project to extensively modify, widen, add lanes, etc. to accommodate the proposed project. Therefore, the project has logical termini.

1.3. PROJECT DESCRIPTION

The California Department of Transportation (Caltrans) proposes to improve safety, operations and mobility on State Route (SR) 49 in Nevada County from post mile 11.1 to R13.3 through the addition of northbound (NB) and southbound (SB) truck climbing lanes outside an urbanized area, 22' median with barrier, 10' shoulders, right turn lanes and two at-grade access-controlled intersections. The installation of a (12' X 12') animal crossing box culvert with fencing will greatly reduce collisions involving deer or other animals. This project is proposed to be constructed in three phases based on funding availability. The construction of northbound and southbound segments of truck climbing lanes and auxiliary lanes will result in improved operations, mobility, greater travel, reliability and efficiency for the movement of goods on SR 49.

In phase one proposed construction consists of a northbound truck climbing lane and a 16' wide continuous two-way left-turn-lane which will reduce the number of incidents of cross centerline, rear end and sideswipe accidents. Widening of exterior shoulders to 10' standard width in phase one, along with the installation of both shoulder and centerline rumble strips will assist fatigued or distracted drivers who drift out of their travel lane. These 10' shoulders will also accommodate bicyclists, pedestrians, and disabled vehicles. Construction of right turn deceleration/acceleration lanes in the southbound direction at Crestview Drive, Smith Road, Bethel Church Way and Wellswood Way in phase one, coupled with the two-way left-turn lane will allow traffic either leaving or entering SR-49 to

move out of the primary travel lane into a dedicated lane to make their turning movements or to safely accelerate and join traffic flow in their direction of travel. Operations will be improved through the installation of Traffic Management Systems. Existing culverts in poor condition within the project limits will be rehabilitated and extended, pavement will be rehabilitated, and lighting will be upgraded to standard.

The wider shoulders and two-way-left-turn lane should also serve a series of other essential purposes:

- It should allow drivers needing to make left turns to access homes, businesses, cross streets, agricultural areas, etc., a lane outside the through lanes to decelerate and stop safely to make their turning movement.
- It should allow drivers needing to make a left turn from access points including homes, businesses, cross streets, agricultural areas, etc., onto SR-49 a place to turn into and either wait until safe or to immediately accelerate to join through traffic in their direction of travel.
- It should act as a soft median buffer for errant vehicles that depart the through lane due to inattention, distraction or fatigue to self-correct prior to entering the opposing lanes of traffic. For drivers on a two-lane facility, it can be challenging to perceive a driver in the opposite direction that may be slowing or stopped in preparation for a turning movement, however, with a continuous two-way left- turn lane, drivers can immediately perceive a vehicle in the two-way left-turn lane and they can react accordingly.

In Phase 2, SR-49 from La Barr Meadows Road/Allison Ranch Road to the Grass Valley city limits would be widened to have two lanes in the northbound direction (constructed in Phase 1), two lanes in the southbound direction, and a two-way-left-turn lane median lane (constructed in Phase 1). In addition to the widening provided under Phase 1, a southbound through lane would be added during Phase 2 to provide passing opportunities.

Under Alternatives 3A and 3B, SR-49 from La Barr Meadows Road/Allison Ranch Road to the Grass Valley city limits would be widened to have two lanes in the northbound direction, two lanes in the southbound direction, and a median barrier. Frontage roads would be constructed to connect Allison Ranch Road to Bethel Church Way and Smith Road to Taylorville Road at the Grass Valley city limits. Other than Wellswood Way, existing driveway and local street access to SR-49 to and from the west would be closed from Allison Ranch Road to Bethel Church Way, and access provided to the frontage road instead. Similarly, existing SR-49 access to and from Smith Road and Crestview Drive would be closed in favor of the new intersection to be located between Smith Road and Crestview Drive. All other access points would be limited to right-in and right-out

movements. In addition, four right turn lanes would be rehabilitated, additional safety features would be provided, TSM and lighting elements would be upgraded.

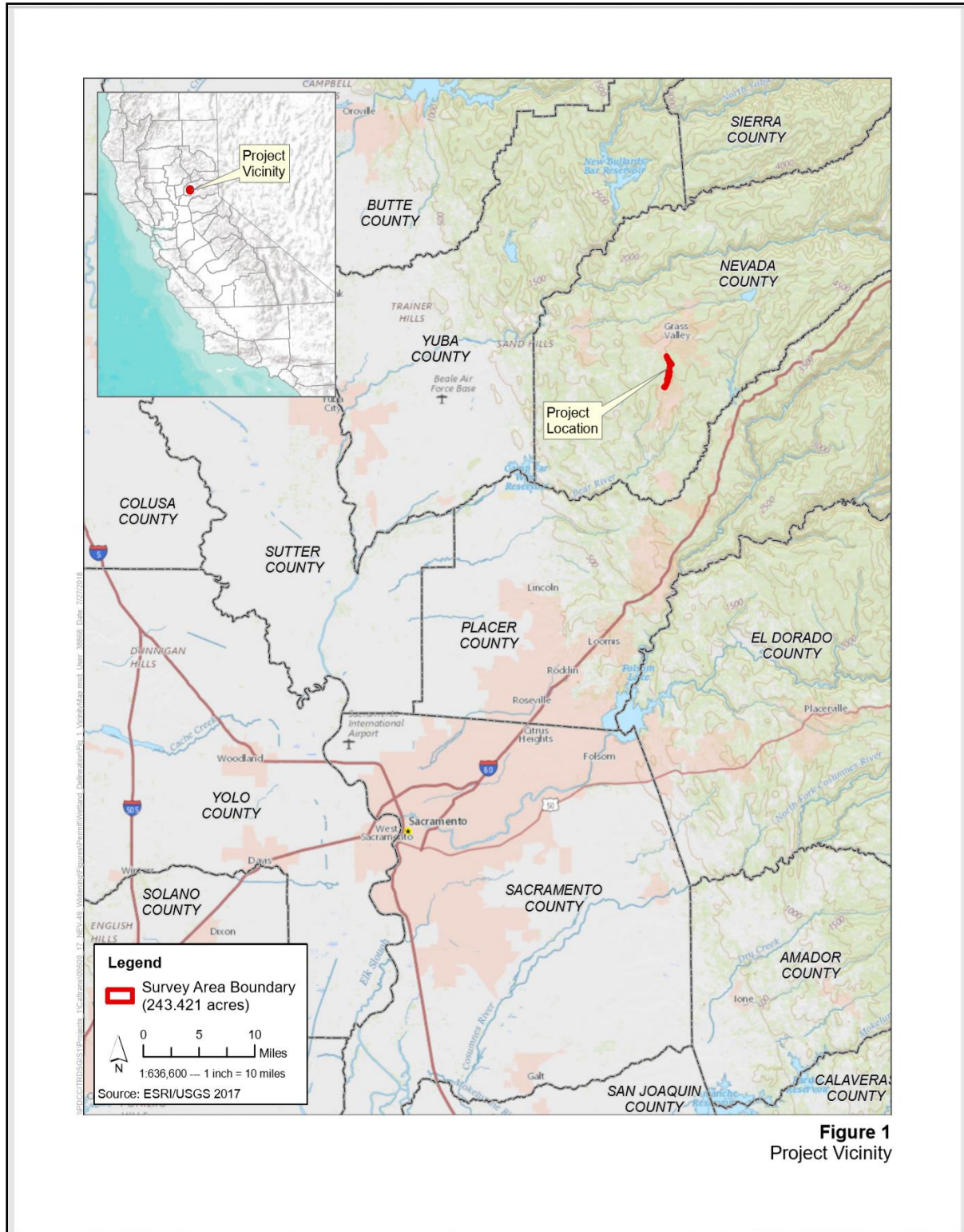


Figure 1
Project Vicinity

Figure 1-1. Project Vicinity Map

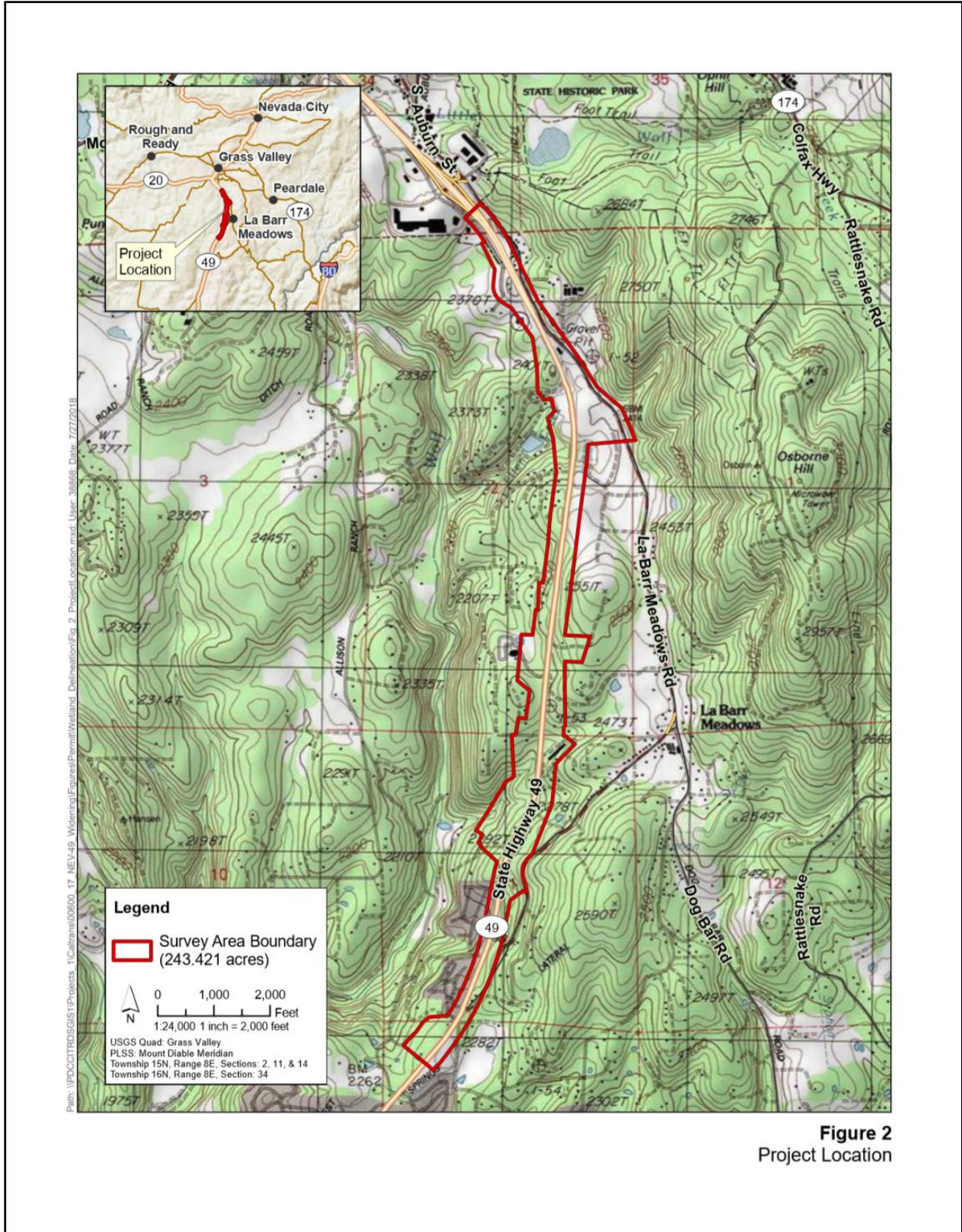


Figure 1-2. Project Location Map

1.4. ALTERNATIVES

Build Alternatives: No-Build Alternative and 2 Build Alternatives

1.4.1. No-Build (No-Action) Alternative

The no-build alternative would maintain the existing roadway conditions. LOS would continue to degrade, roadway congestion would not be reduced nor would right turn pockets, pavement rehabilitation or culverts be upgraded; therefore, the purpose and need of the project would not be met.

1.4.2. Build Alternatives

Common Design Features of the Build Alternatives 3A and 3B:

Phase 1 of 3A & 3B:

- Construct an additional northbound through lane the length of the project (approx. 2.5 miles)
- Construct a 16-foot wide two-way-left-turn-lane
- Extend existing shoulders to the standard 10-foot width
- Rehabilitate four right turn lanes into turn-pockets off SR-49 at Crestview Drive, Smith Road, Bethel Church Way and Wellswood Way
- Construct animal crossing/s

Phase 2 of 3A & 3B:

- Construct an additional southbound through lane the length of the project (approximately 2.5 miles)

Phase 3 of 3A & 3B:

- Construct a 22-foot wide concrete median barrier
- Construct sound walls on the west (approximately 7000 feet) and east (approximately 5000 feet) sides of SR-49
- Construct frontage roads
- Add safety features, such as, shoulder and centerline rumble strips, reflective pavement markings and recessed delineators
- Add Transportation System Management (TSM) elements, such as, census stations, mass transit bus stops and shared bikeway
- Add lighting elements on both sides of the highway spaced every 250 feet

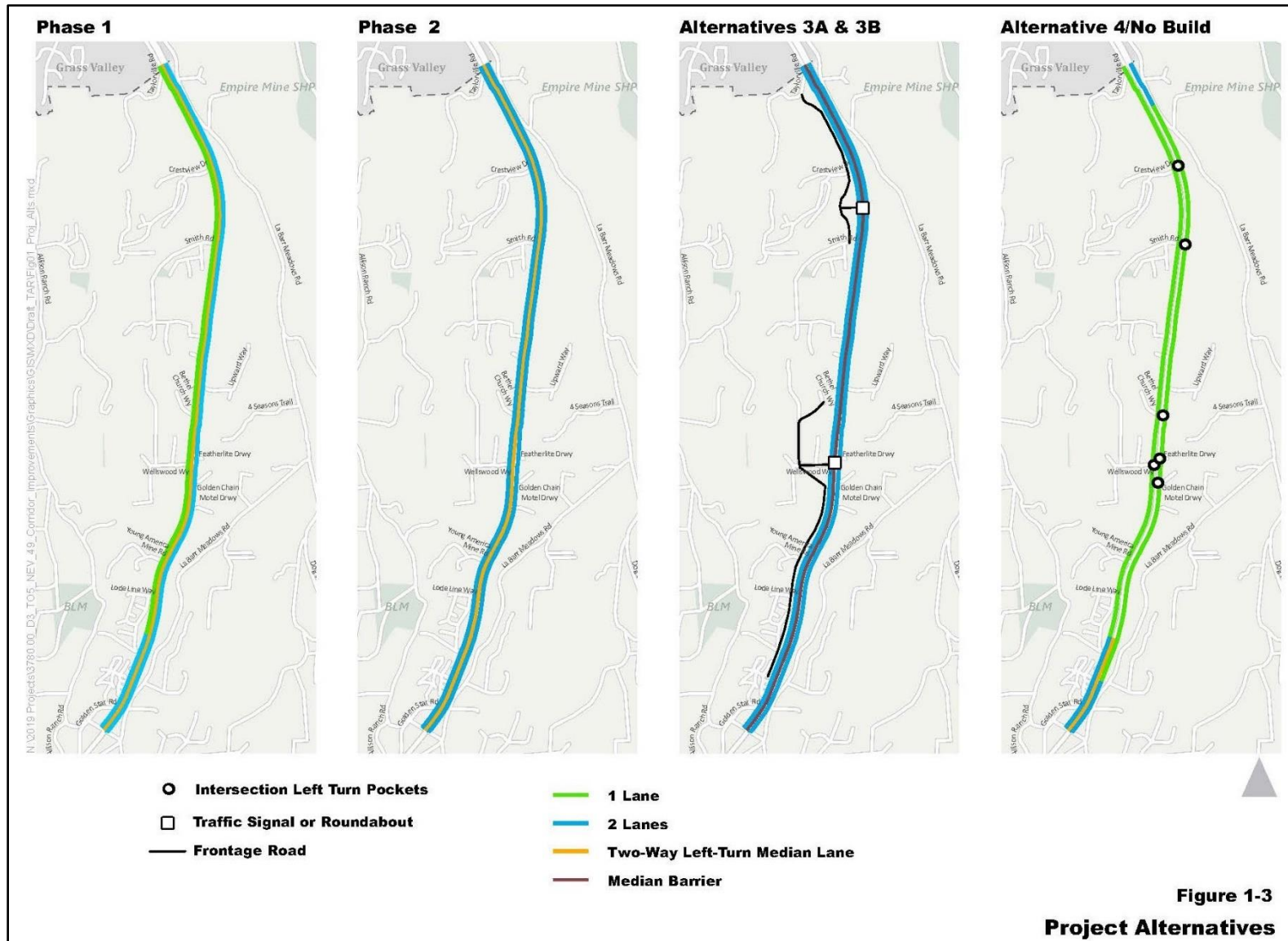


Figure 1-3. Project Alternatives

Unique Features of Build Alternatives

Alternatives 3A:

- Construct two signalized intersections at Smith Road and Crestview Drive

All intersection turning movements would be provided at only two intersections along the corridor: Wellwood Way and a new intersection to be located between Smith Road and Crestview Drive.

Alternatives 3B:

- Construct two roundabouts at Smith Road and Crestview Drive

All intersection turning movements would be provided at two roundabouts along the corridor: Wellwood Way and between Smith Road and Crestview Drive.

1.5. PERMITS AND APPROVALS NEEDED

Table 1-3 lists the permits and coordination that would likely be required for the project.

Table 1- 3. Permits and Approvals Needed

Agency	PLAC	Status
United States Army Corps of Engineers	Section 404 Permit for filling or dredging waters of the United States	Application for Section 404 permit expected after FED approval.
California Department of Fish and Wildlife	1602 Agreement for Streambed Alteration	Applications for 1602 permit after FED approval.
California Water Resources Board	Water Discharge Permit	Application for Section 401 permit expected after FED approval.
Federal Highway Administration	Air Quality Conformity Determination	Request for determination to be submitted following selection of a preferred alternative/The Federal Highway Administration found that the project is consistent with the requirements of the Clean Air Act on December 3, 2012.
State Historic Preservation Officer	Finding of Effect (FOE)	FOE expected before FED.
California Transportation Commission	CTC vote to approve funds	Following the approval of the FED, the California Transportation Commission will be required to vote to approve funding for the project.
Air Pollution Control District (APCD) or Air Quality Management District (AQMD)	National Emissions Standards for Hazardous Air Pollutants (NESHAP) Notification	NESHAP notification may be needed pending the results from the Structural Survey during the Design phase.

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

2.1. TOPICS CONSIDERED BUT DETERMINED NOT TO BE RELEVANT

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

Coastal Zone - the project is not located within the coastal zone; therefore, there would be no effects to coastal resources.

Wild and Scenic Rivers - the project is not located in an area with wild and scenic rivers; therefore, there would be no effects to wild and scenic river resources.

Parks and Recreational Facilities - the project is not located near any park or recreational facilities; therefore, there would be no effects on parks or recreational facility resources.

Floodplains - the project is not located within a 100-year or 500-year floodplain; therefore, there would be no effects to the 100-year or 500-year floodplain.

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.

Geology and Soils - Nevada County general plan indicates that Nevada County is not prone to earthquakes. A database search was conducted on the Department of Conservation/California Geological Survey site on 4/13/2020 that discovered no known faults per Earthquake maps: <https://maps.conservation.ca.gov/cgs/EQZApp/app/> in the project area. The closest fault was in the Bangor Quadrangle in Butte County.

A geotechnical report would be compiled during the PS&E phase of the project for project specific measures, should they be required. Additionally, Caltrans' BMPs and Standard Special Provisions would be implemented; therefore, no impacts are anticipated.

Hydrology - research conducted by the Caltrans' Hydraulics Branch on November 28, 2018 indicates the following: According to Federal Emergency Management Agency (FEMA) Floodplain Insurance Rate Map (FIRM) dated February 3, 2010, the limits of the project are within Flood Zone X (outside of the 100-year and 500-year floodplain) or Minimal Flood Hazard Zone with respect to the 100-year and 500-year floodplains; therefore, no Floodplain Hydraulics Study is required and no impacts are anticipated.

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

Farmland - the land use designations for the project area are Industrial, Urban Medium Density Residential and Highway Commercial with no farmland having been identified within the study area; therefore, there would be no effects to farmlands.

Community Character and Cohesion - 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. The proposed project would require property acquisitions, so some displacement would occur. These displacements would not be enough to cause changes to the regional population due to the relatively small number of relocations required. The Alternatives would not contribute to changes in the population characteristics of the region and study area; therefore, for the rationale mentioned above, there would be no effects on community character and cohesion.

Utilities and Service Systems - during construction, all utilities and service systems would be maintained with no disruption of service; therefore, there would be no adverse impacts to utilities and service systems.

2.2. HUMAN ENVIRONMENT

2.2.1. Existing and Future Land Use

A Community Impact Analysis was completed for the project (September 2020) by Caltrans, in accordance with Caltrans standards as defined in the Standard Environmental Reference. The information in this report has been prepared as a “blended” assessment to comply with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) and other substantive environmental laws applicable to the subjects addressed in the report.

The purpose of this report is to provide information regarding social, economic and land use effects of the project so that final transportation decisions will be made in the public interest. This report is intended to clearly describe the relevant existing conditions and the potential socioeconomic impacts of the project.

With an area of about 978 square miles, the County of Nevada is situated in the gold country of northern California. The county is located about 45 miles northeast of Sacramento, 130 miles northeast of San Francisco, and 12 miles southwest of Reno, Nevada. It is bordered by Sierra County to the north, Yuba County to west, Placer County to the South, and the State of Nevada to the east (**see Figure 2.1**).

SR 49 runs north/south and is a major route in Nevada County, connecting the cities of Grass Valley and Nevada City. SR 20 and SR 49 also serve as an emergency detour route for I-80. SR 49 is the lifeline for much of Nevada County's freight and lumber traffic, and it also provides access to recreational and tourist attractions. To the west of Nevada City, this route continues in a northerly direction to the Nevada/Yuba County line.



Figure 2-1. Nevada County

Source: [Nevada-County-map.jpg \(4800x3263\) \(ncerc.org\)](#)

The Nevada 49 Corridor Improvement Project is located south of the city of Grass Valley in Nevada County between post miles 10.8 and 13.3. Most of the area is rural and has large pockets of undeveloped land. This foothill area of the Sierra is a combination of tree-covered rolling hills and stream channels, which have greatly affected road and utility locations.

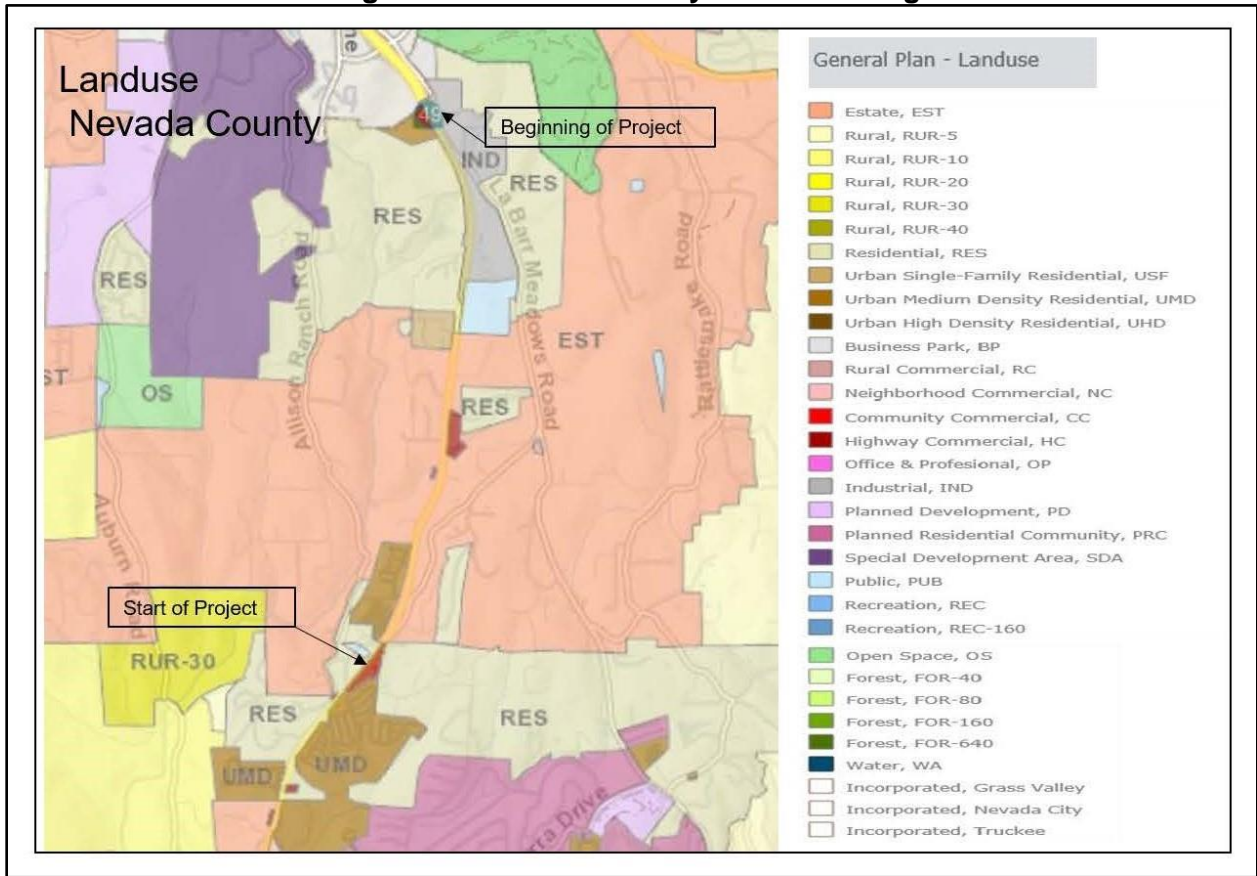
The land uses along the corridor are rural and medium residential, interspersed with commercial and light industrial. The parcels surrounding the project are zoned as Residential Agricultural, Light Industrial, Single-Family Residential, Public Highway Commercial, and Medium Density Residential with the Land Uses designations being Industrial, Urban Medium Density Residential, and Highway Commercial (**see Figure 2.2**). The undeveloped parcels include grasslands with native and non-native vegetation.

There are no local projects in development within the project area. The table below (**Table 2-1**) lists the Caltrans' projects within the project vicinity.

Table 2-1 Planned Projects Near SR 49

Name and Address	Jurisdiction	Status
03-3H820 McKnight Sink Hole	Nevada County	2018
03-0H220 Culvert Rehabilitation	Nevada County	2019
03-2A690 La Barr Meadows	Nevada County	2019
03-2H090 Nev 49 Super elevation	Nevada County	2020
03-3H510 Nevada 49 Safety	Nevada County	Future Project

Figure 2-2. Nevada County District Zoning



Source: Western-Nevada-County-Zoning-Map-PDF (mynevadacounty.com)

2.2.2. Consistency With State, Regional, and Local Plans

Land use planning is governed by Nevada County. The *Nevada 2019-2027 Housing Element Update* for Nevada County explores resources and constraints for the county. The document examines Nevada County’s housing needs, as they exist today, and projects future housing needs.

The Nevada 2019-2027 Housing Element Update sets community goals, objectives, and policies concerning needs, and it includes housing programs that respond to current and future needs within the limitations posed by available resources. It also details an eight-year schedule of actions the community is undertaking or plans to undertake to achieve its housing goals and objectives.

According to the Nevada 2019-2027 Housing Element Update, between 2009 and 2018, housing construction within the County has averaged approximately 96 single-family units per year. During the same reporting period, 115 multi-family building permits were issued in Nevada County, which includes Accessory Dwelling Units. As shown on **Table 2.2**, the number of housing units constructed is broken down annually into the categories of Single-Family, Multi-Family, and Mobile Home Units. **Figure 2.2** also shows the Vacant Land Inventory Grass Valley/Nevada City Area and the study area.

As evident on **Table 2.2**, a slowdown in building permit issuance began after 2009, in which only 68 Single-Family building permits being issued. As reflected in **Table 2.2**, new construction activity in the unincorporated area experienced dramatic annual decreases beginning in 2010 and continuing until 2013 where 95 building permits were issued. Beginning in 2014, building permit activity began to increase with the issuance of 72 single-family permits with activity

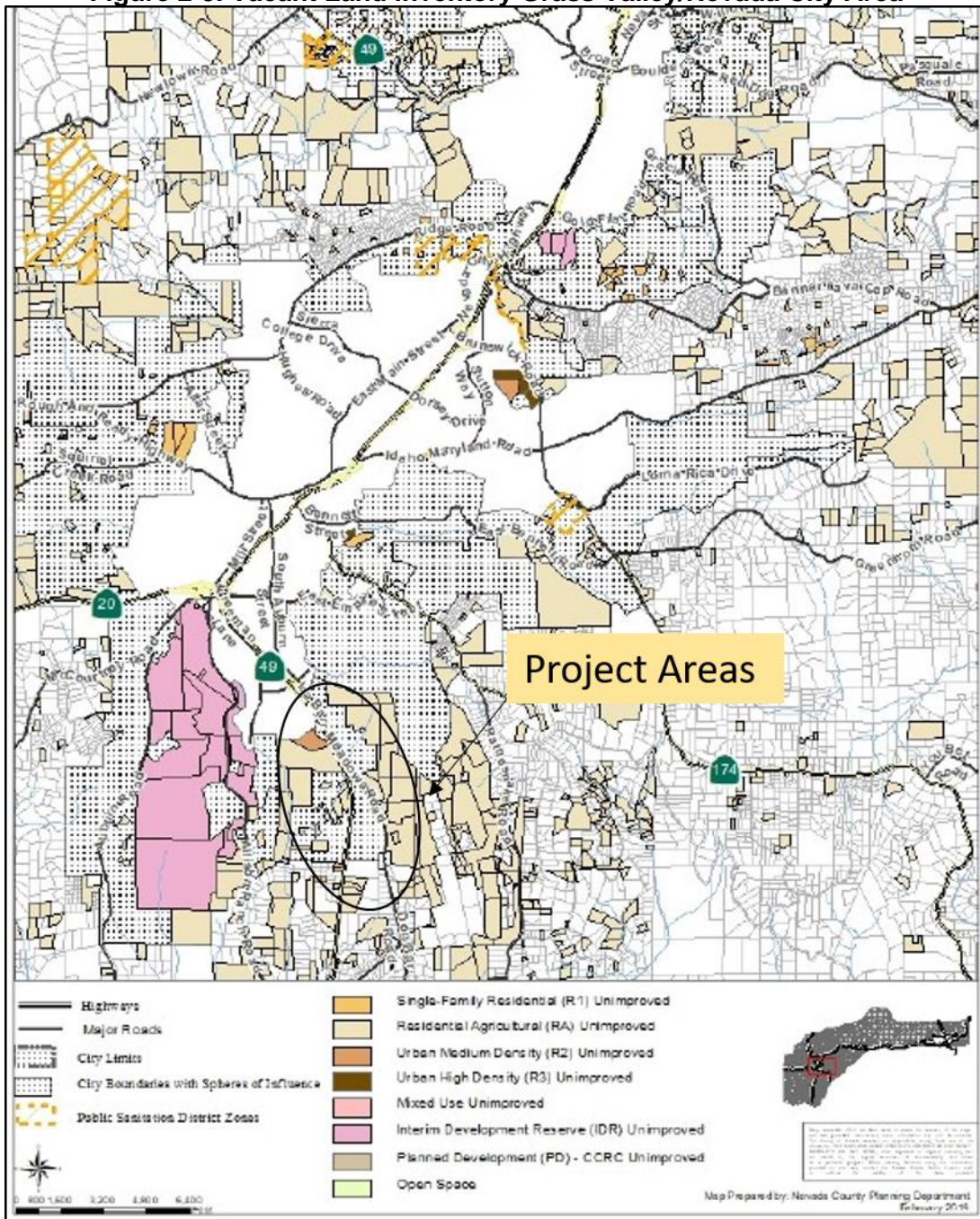
<i>Year Built</i>	<i>Single-Family</i>	<i>Multi-Family⁽¹⁾</i>	<i>Mobile Home</i>
2009	136	17	9
2010	68	10	6
2011	49	2	1
2012	38	9	3
2013	95	0	1
2014	72	11	17
2015	106	9	23
2016	132	19	18
2017	94	14	35
2018	167	24	44
TOTAL	957	115	157

peaking in 2016 with the issuance of 132 Single-Family building permits before dropping slightly in 2017 and then increasing to 167 single-family permits in 2018. As reflected on **Table 2.3**, 2014 was the first time in the past five years that the county has issued more permits for new Single-Family construction than prior years.

Table 2.2 Ten Year Residential Construction Profile

Source: 2019-2027 Housing Element Update Nevada County Housing

Figure 2-3. Vacant Land Inventory Grass Valley/Nevada City Area



Source: Housing Element Update Nevada County Housing

Another regional document that analyzes growth is the **Nevada County Regional Transportation Plan**. The regional plan describes growth as expected to be moderate. The Nevada County Regional Transportation Plan describes that in the 2000, the total county population was reported at 92,033. By 2005, the county had 97,454, and population peaked at 98,764 in 2010. The 2010 population represented a 7.3% increase overall since 2000 and translates to approximately 0.7% per year growth during the period.

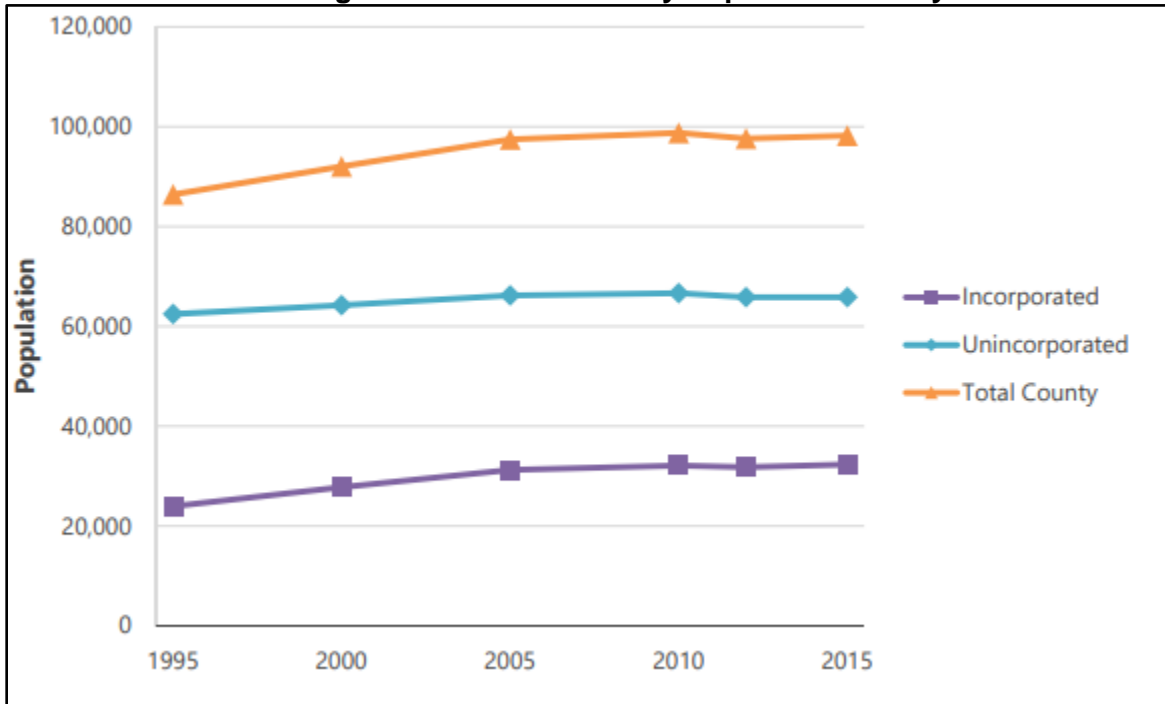
Between 2010 and 2012, population declined slightly to 97,637, or approximately -1.1%. Since 2012, population has increased slightly to 98,193. The increase from 2012 to 2015 was 0.6%, or about 0.2% annually. The historic and current distribution of population for the county is shown in **Table 2.3, Figure 2.4 and Figure 2.5**.

Table 2-3 Nevada County Population Distribution

Area of Residence	Population					
	Jan 1995	Apr 2000	Jan 2005	Apr 2010	Jan 2012	Jan 2015
Grass Valley	9,332	10,922	12,864	12,860	12,731	12,925
Nevada City	2,855	2,996	3,019	3,068	3,085	3,194
Truckee	11,775	13,864	15,364	16,180	15,981	16,211
Unincorporated Area	62,464	64,251	66,207	66,656	65,840	65,863
Total County	86,426	92,033	97,454	98,764	97,637	98,193
Source: State of California, Department of Finance, Report E-4 Population Estimates for Cities, Counties, and the State, Sacramento, California, May 2015. State of California, Department of Finance, E-4 Historical Population Estimates for City, County and the State, 1991-2000, with 1990 and 2000 Census Counts. Sacramento, California, September 2015.						

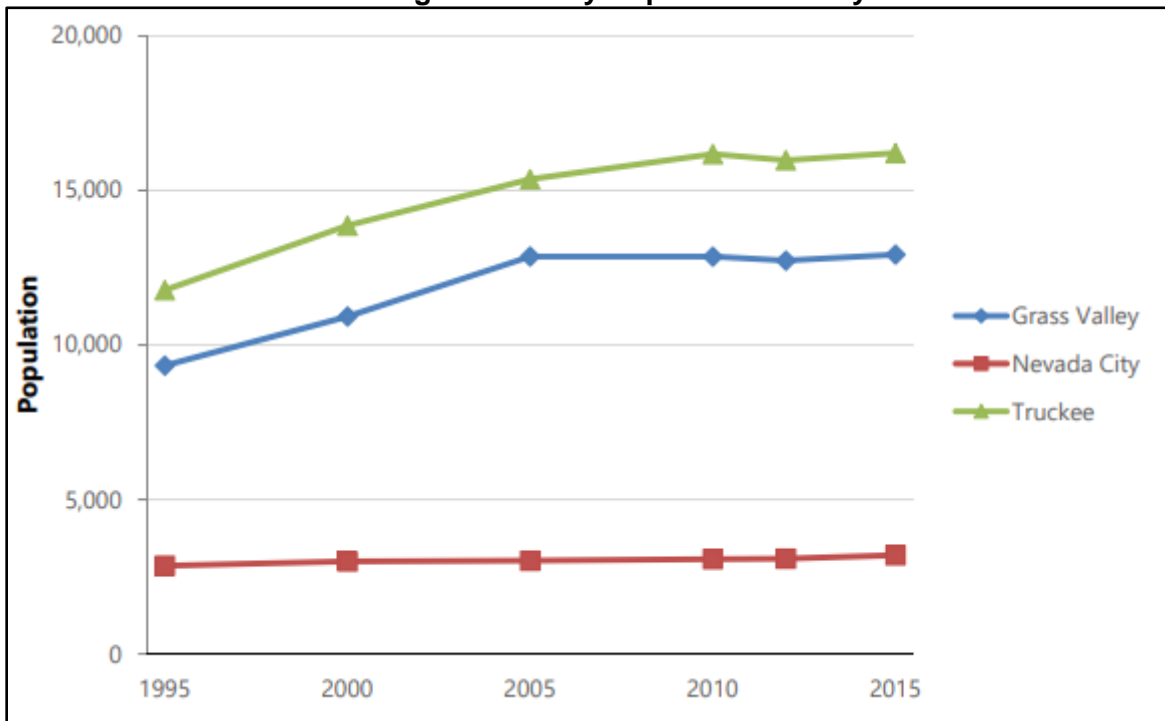
Source: Nevada County Regional Transportation Plan

Figure 2-4. Nevada County Population History



Source: Nevada County Regional Transportation Plan

Figure 2-5. City Population History



Source: Nevada County Regional Transportation Plan

Nevada County General Plan

The following General Plan Policies are relevant to and consistent with the proposed project.

- Policy 1.2.3 The General Plan is intended to provide for the development of Nevada County as a balanced community with adequate amounts of land designated in each land use category to achieve a balance among housing, employment, retail and commercial services, recreation, and public facilities.
- Policy 1.3.7 Within the Rural Center, sidewalks, multi-purpose pathways, bikeways, greenways and recreational trails should be internally integrated and also provide connectivity to adjacent neighborhoods and regional non-motorized trail systems.

Policy 1.3.11 Encourage future improvements of public and private facilities/services to that which will enhance the specific character and lifestyle of Rural Regions.

Nevada County Regional Transportation Plan

The following policies are included in the Nevada Regional Transportation Plan and are relevant to the project.

- Policy 2.3 Maintain and improve general public transportation services within Grass Valley and between Grass Valley and Nevada City.
- G1: Improve multimodal mobility and accessibility for all people.
- G1-P1 Manage and operate an efficient integrated system.
- G1-P2 Invest strategically to optimize system performance.
- G1-P3 Provide viable and equitable multimodal choices, including active transportation.

The Nevada County Regional Transportation Plan 2015-2035 also describes the population projections to increase from 98,193 in 2015 to approximately 105,389 in 2025 and 110,224 in 2035. It represents an increase of 12,031 persons or 12% over 20 years, or about 0.6% annually. Annual growth is expected to average about 0.7% from 2015 to 2025 but slow to 0.6% from 2025 to 2035. As Nevada County's population increases, additional demand will be placed on the existing transportation infrastructure. The analysis in the regional transportation plan reviews the need for improvements to existing facilities, as well as the need for new facilities.

Environmental Consequences

As described above, implementation of the proposed project would be consistent with state, regional and local plans; therefore, no conflicts are anticipated.

No Build Alternative

The No Build Alternative would not improve mobility and traffic operations in the study area, which is an important route through Nevada County. 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.

Avoidance and Minimization Measures

No avoidance or minimization measures are necessary.

2.2.3. Growth

Regulatory Setting

The Council on Environmental Quality (CEQ) regulations, which established 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

The analysis of growth-related, indirect impacts for this project follow the first-cut screening guidelines provided in Caltrans' *Guidelines for Preparers of Growth-Related, Indirect Impact Analyses* (California Department of Transportation 2006).

A two-phased approach is used to assess growth-related impacts

- The first phase is the first-cut screening. The goal of the first-cut screening is to help identify the potential for growth and determine whether further analysis is necessary.
- If necessary, the second phase involves the analysis of growth that is conducted if the first-cut screening analysis reveals that growth impacts could occur.

Nevada County has experienced slow population growth compared to other California counties. Between 2010 and 2018, Nevada County grew by 1%. According to the California Department of Finance, the total population in 2018 was 99,155, and most of the population growth has taken place in the unincorporated area and the city of Truckee. The growth patterns in Nevada County have occurred within the unincorporated area of the county.

Table 2-4 Population Estimates for Nevada County 2010-2018 with 2010 Census Benchmark

COUNTY/CITY	4/1/2010	1/1/2011	1/1/2012	1/1/2013	1/1/2014	1/1/2015	1/1/2016	1/1/2017	1/1/2018
Grass Valley	12,860	13,040	13,000	12,994	13,061	13,062	13,090	13,035	13,041
Nevada City	3,068	3,206	3,201	3,201	3,177	3,287	3,314	3,232	3,226
Truckee	16,180	15,985	15,961	15,928	15,933	16,046	16,148	16,271	16,681
Balance Of County	66,656	66,198	65,968	65,650	65,671	65,822	65,968	66,075	66,207
Incorporated	32,108	32,231	32,162	32,123	32,171	32,395	32,552	32,538	32,948
County Total	98,764	98,429	98,130	97,773	97,842	98,217	98,520	98,613	99,155

Source: State of California, Department of Finance, Report E-4 Population Estimates for Cities, Counties, and State 2011-2018 with 2010 Benchmark

Environmental Consequences

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?

Access to employment, shopping, or other destinations is not expected to change. There would be no changes to land use. Since SR 49 is an existing roadway in Nevada 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 proposed project features are 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. 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.

2.2.4. 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 (CIA) (September 2020) & a Relocation Impact Statement (RIS) (August 2020) were completed for the proposed project. The purpose of the CIA is to provide information regarding social, economic and land use effects of the project so that final transportation decisions will be made in the public interest. This report is intended to clearly describe the relevant existing conditions and the potential socioeconomic impacts of the project.

The purpose of the Relocation Impact Statement is to provide the Department of Transportation, local agencies and the public with information on the impact this project would have on residential and nonresidential occupants within the two project alternatives.

The study area has a great number of large parcels, some of which have low-density and single-family residential development. Given the distance between residence and SR 49, the area surrounding SR-49 within the project area is described as rural. The area can be

characterized as sparsely developed. The surrounding land uses are commercial and industrial. Businesses are mainly located on the northeast of the project area. The topography of the area is made up of broad rolling hills with small low-density and single-family residential development. Open space consists primarily of oak/pine woodlands with grasslands and chaparral. The Bethel and Foothill Churches, Mountain Air Mobile Park & RV, Tall Pine Mobile Home Estates, and a Fire Station is located on the southwest side.

The affected properties consist of urban residential and commercial businesses, that range in condition from fair to good. Most of the housing in the study area is zoned residential agriculture with large parcels, medium density residential, and a Mobile and RV park. Single-family houses are the most common type of housing units in the study area. Mobile homes are the second highest largest number of housing types.

Environmental Consequences

Tables 2-5 through 2-7 show by Phase/Alternative the number of potential residential and nonresidential displacements and available replacement housing due to the proposed project.

Table 2-5. Summary of Residential and Nonresidential Displacements

Alternative	Single Family Units	Mobile Homes	Multi-Family Units	Residential Displacements (Units/Residents)*	Nonresidential Displacements (Type/Employees)**
Alternative 1	10	N/A	N/A	29 +/-	7 (Commercial and Retail)
Alternative 2	9	N/A	N/A	26 +/-	7 (Commercial and Retail)
Alternative 3A & 3B	18	N/A	N/A	52 +/-	10 (Commercial and Retail)

* Estimate of residents is based on an average of 2.92 residents per unit (2010 Census); Source: California State Department of Finance Demographic Research Unit. Residential displacees were not interviewed nor contacted to complete surveys.

Table 2-6. Summary of Relocation Resources Available to Displacees (Residential)

Relocation Resource	For Rent	For Sale	Total Units
Multi-Family Residences	12	10	22
Two Bedroom Houses	37	38	75
Three Bedroom Houses	53	125	178
Mobile Homes	14	17	31

Table 2-7. Summary of Relocation Resources Available to Displacees (Nonresidential)

Relocation Resource	For Rent - appropriate zoning and site requirements	For Sale - appropriate zoning and site requirements	Total Units
Office Complex	123	20	143
Industrial Complex	24	6	30
Special Services / Use	20	24	44
Commercial Operation	34	3	37
Industrial/Commercial Properties	32	5	37

Relocation impacts within the project area are noncomplex and adequate relocation resources are available for displacees. All displacements will be in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and the California Relocation Act.

Phase 1 has 10 residential, single-family residences and seven nonresidential, commercial properties, that may need to be acquired for the project which will result in displacements. Phase 2 has nine residential, single-family residences and seven nonresidential, commercial properties, that may need to be acquired for the project which will result in displacements. Alternatives 3A & 3B have 18 residential, single-family residences, and 10 nonresidential, commercial properties, that may need to be acquired for the project which will result in displacements. Based on market research, there will be sufficient single-family residences and commercial properties that are equal to or better than the displacement properties available for rent or purchase for either project.

All displacees will be contacted by a Relocation Agent, who will ensure that eligible displacees receive their full relocation benefits, including advisory assistance, and that all activities will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Relocation resources shall be available to all displacees free of discrimination. At the time of the first written offer to purchase, owner occupants are given a detailed explanation of Caltrans' "Relocation Program and Services." Tenant occupants of properties to be acquired are contacted soon after the first written offer to purchase, and also are given a detailed explanation of Caltrans' "Relocation Program and Services." In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, Caltrans 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.

Avoidance and Minimization 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.

In addition, the Nonresidential Relocation Assistance Program (RAP) provides assistance to businesses, farms, and nonprofit organizations in locating suitable replacement properties and reimbursement for certain costs involved in relocation. The RAP would provide current lists of properties offered for sale or rent, suitable for a particular business's specific relocation needs.

References

California State Department of Finance Demographic Research Unit.

Online listing searches on Zillow.com, Rent.com, Trulia.com, Realtor.com and Loopnet.com as of 08/06/2020.

Online listing searches on Zillow, Rent.com, Century21.com, Rofo.com, Loopnet.com and Craigslist.org as of 08/06/2020.

2.2.5. Environmental Justice

Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President William J. Clinton on February 11, 1994. This EO directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2020, this was \$26,200 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964, and related statutes, have also been included in this project. The Department's commitment to upholding the mandates of Title VI is demonstrated by its Title VI Policy Statement, signed by the Director, which can be found in Appendix A of this document.

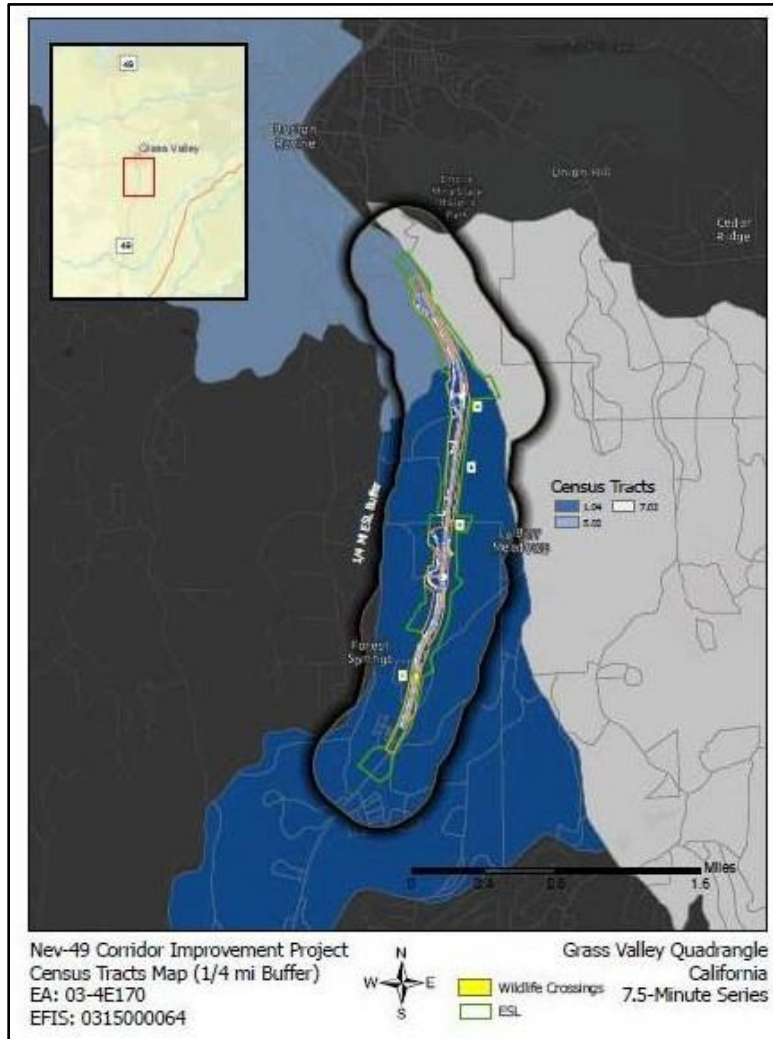


Figure 2-6. Community Impact Assessment Study Area

Affected Environment

Analysis of environmental justice impacts is a two-step process; the first is determining the presence of protected populations (minority or low-income populations), and the second is determining if the project has a disproportionate adverse impact on those protected populations. According to the guidance provided in *Caltrans Standard Environmental Reference*, Chapter 4, *Community Impact Assessment*, environmental justice and equity is determined based on the comparison of impacts on minority and low-income groups and impacts on non-minority or higher income populations. Impacts are considered disproportionate if they are more

severe or greater in magnitude for minority and low-income populations. Impacts to populations can include noise, air quality, water quality, hazardous waste, community cohesion, aesthetics, economic vitality, accessibility, safety, and construction impacts.

The study area for the environmental justice analysis consists of the census tracts (1.04, 5.02 and 7.02) within 0.25-mile of the proposed project (Figure 2.6). These are the census tracts that would experience direct and indirect impacts; therefore, they were used to gather information on race/ethnicity and income for the surrounding community.

Federal

To determine if environmental justice populations exist within the study area, a demographic profile of the study area block groups was developed to identify low-income and minority populations present in the study area. For the purposes of this analysis, a block group was considered to contain an environmental justice population if:

- The total minority population of the block group is more than 50% of the total population or is substantially higher than the city or county where it is located.
- The proportion of the block group population that is below the federal poverty level exceeds that of the city or county where it is located.

Table 2-8 shows the population and race/ethnicity data for the study area. Non-Hispanic Whites are the largest racial/ethnicity group for the three census tracts in the study area. The total population in the project area is 12,292. 10,651 are Non-Hispanic White, making this group 87% of the population. Native Hawaiian and Other Pacific Islander is the smallest population in the study area and census tracts.

Table 2-8 Race and Ethnicity Data

Geographic Are	Non-Hispanic White alone	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some other race	Two or more races	Hispanic or Latino	Total
Nevada County	84,470	601	570	989	154	130	2,897	9,281	99,092
Census Tract 1.04	2,909	-	-	12	28	-	93	117	3,159
Census Tract 5.02	3,952	-	36	187	-	-	159	574	4,908
Census Tract 7.02	3,790	46	3	30	-	49	172	135	4,225

Of the total population, minority populations make up the about 13% or 1,641. The second largest population group is Hispanic or Latino group. Hispanic or Latino comprise 7% of the minority population, and the Asian population are the third largest group.

The population for Census Tract 1.04 is over 92% Non-Hispanic White and 4% is Hispanic or Latino. Census Tract 5.02 has the largest number of Hispanic or Latino. It contains 12% of Hispanic or Latino, and 82% of Non-Hispanic White. This census tract covers more area in Grass Valley instead of the project area.

Census Tract 5.02 has the highest percentage of Non-Hispanic Whites followed by Hispanic or Latino. Census Tract 5.02 has 80% of Non-Hispanic Whites which is the highest percent in the .25-mile buffer. Unlike 1.04, Census Tracts 5.02 and 7.02 have lower percentages of minority population of Hispanics or Latinos.

For the study area, the demographic data indicates that the proportion of the population comprised of minority residents *do not* meet the threshold mentioned above; therefore, an environmental justice community *has not* been identified *based on population data*.

Table 2-9 shows that 11.4% of the population in Nevada County is below the Federal poverty level. Within the study area, *all census tracks meet or exceed these levels*; therefore,

environmental justice communities *are present* within the study area. Thus, analysis of effects related to environmental justice populations *is required* subject to the provisions of EO 12898.

Table 2-9 Poverty Data – Nevada County

Area Name	Population	Estimated numbers below Federal Poverty levels - Nevada County/Study Area	Estimated percentages below Federal Poverty levels - Nevada County/Study Area
Nevada County	98,014	11,169	11.4
Census Tract 1.04	3,144	420	13.4
Census Tract 5.02	4,908	833	17.0
Census Tract 7.02	4,225	480	11.4

State

The majority of the residential development and communities adjacent to the SR 49 corridor in Nevada County have been identified as “Low-income households” and “Low-income communities” in Nevada County per the AB 1550 definitions defined below:

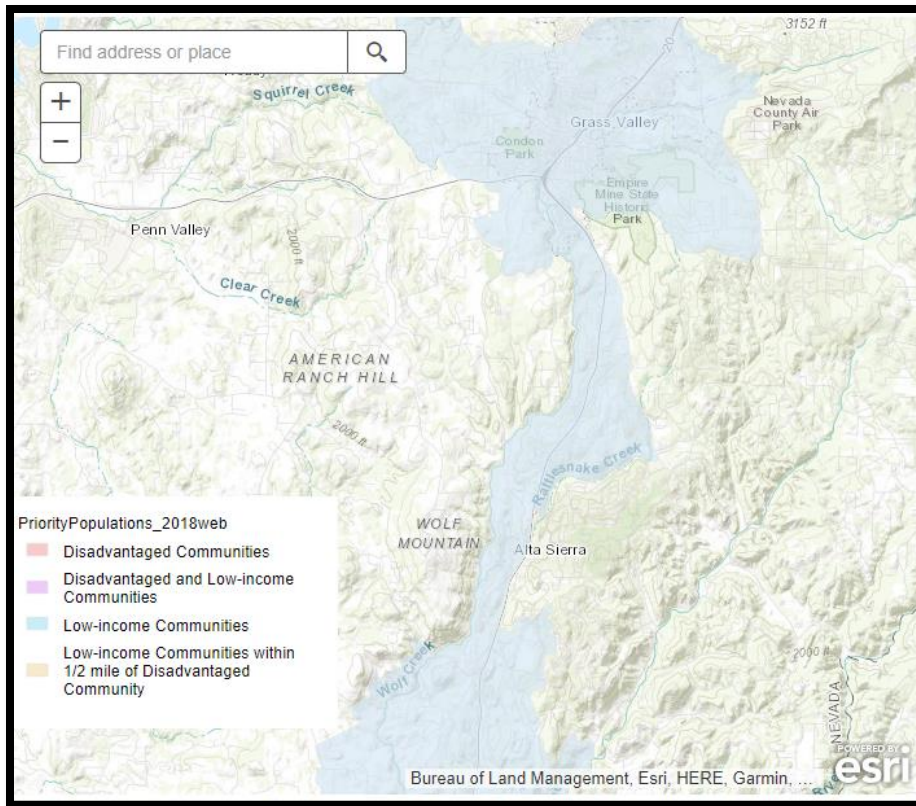


Figure 2-7. Map of the AB 1550 Low-Income Communities adjacent to the SR 49 Corridor.

“Low-income households” are those with household incomes at or below 80 percent of the statewide median income or with household incomes at or below the threshold designated as low income by the Department of

Housing and Community Development’s list of state income limits adopted pursuant to Section 50093.

“Low-income communities” are census tracts with median household incomes at or below 80 percent of the statewide median income or with median household incomes at or below the threshold designated as low income by the Department of Housing and Community Development’s list of state income limits adopted pursuant to Section 50093.

Environmental Consequences

No Build Alternative

The No Build Alternative would not affect environmental justice populations because the proposed project would not be implemented.

Build Alternatives

Potential effects of a proposed project are typically experienced in the area adjacent to and immediately surrounding the location of the project. Summarized below are the impacts related to air quality, noise, traffic and transportation, community cohesion, aesthetics, and relocations and real property acquisitions on environmental justice populations.

Air

Disproportionate air quality impacts during construction are anticipated to impact the Environmental Justice Community when compared to the rest of the county because these communities have been identified adjacent to and within the study area. As discussed in the air analysis prepared for the project, air quality impacts from construction activities would result from the operation of heavy construction equipment, arrival and departure of heavy trucks, and earth moving activities. Construction air quality will vary on a day-to-day basis depending on the specific task being completed. These activities would mainly be borne by the community that surrounds the project area, which has been identified as an Environmental Justice community. By adhering to Caltrans’ Standard Specifications and including avoidance and minimization measures into the project would reduce any temporary impacts.

Long term air quality within the project area is anticipated to improve by opening year due to the improvements in mobility thus reducing congestion along the corridor, which would be beneficial to the Environmental Justice community and the rest of Nevada County.

Noise

Disproportionate noise impacts during construction are anticipated to impact the Environmental Justice community when compared to the rest of the county because these communities have been identified adjacent to and within the study area. As discussed in the noise analysis prepared for the project, noise from construction activities would result from the operation of heavy construction equipment and arrival and departure of heavy trucks. Construction noise levels will vary on a day-to-day basis depending on the specific task being completed. These

activities would mainly be borne by the community that surrounds the project area, which has been identified as an Environmental Justice community. Minimization measures and adherence to Caltrans Standard Specifications would reduce temporary noise impacts.

Long-term noise impacts are anticipated that will disproportionately impact the Environmental Justice community when compared to the rest of the county because these communities have been identified adjacent to and within the study area. Because long-term noise impacts are anticipated, a Noise Abatement Decision Report (NADR) will be prepared to determine the feasibility of noise abatement (Chapter 2, Noise).

Traffic/Transportation

Temporary impacts on circulation and access would result from construction activities. Work that requires partial roadway closures would occur mostly during non-peak commute hours, at night, or on weekends. While the impacts would be experienced by the environmental justice communities adjacent to the project, these temporary construction impacts would affect all populations equally along the corridor, not solely or disproportionately impact the Environmental Justice community. In addition, a Transportation Management Plan (TMP) would be implemented during construction to address impacts related to traffic and transportation/bicycle and pedestrian facilities, reducing potential impacts. Bicycle and pedestrian access would be maintained during construction. Construction of the build alternatives would comply with all appropriate, necessary, and required construction safety measures.

The SR 49 Corridor Improvement Project eliminates the gap that currently exists between SR 49 south of the McKnight Way Interchange and the previously completed SR 49/La Barr Meadows improvement project (Post Mile 10.8), creating a Class III bicycle and pedestrian connection between the residential areas adjacent to La Barr Meadows Road, Lode Line Way, Young American Mine Road, Cornette Way, Wellswood Way, Upward Way, Smith Road, and the commercial land uses located in the vicinity of the McKnight Way Interchange in the City of Grass Valley, as discussed in Chapter 2, (Traffic and Transportation/ Pedestrian and Bicycle Facilities). It will also provide for safer pedestrian and bicycle connections to the fixed route transit stop located off of La Barr Meadows Road.

The project would benefit a large and diverse population, including motorists, residents, and businesses by improving safety and circulation in the study area. Implementation of the build alternatives would improve the connectivity of the roadway network for all users of the transportation system, including Environmental Justice populations. Construction of the build alternatives would have a beneficial effect on safety for all groups in the study area, including the Environmental Justice community. Therefore, *neither construction nor operation* of the build alternatives *would result in a disproportionately high and adverse traffic/transportation effects* on the Environmental Justice community, but would in fact provide a benefit to this community.

Community Cohesion

The Build Alternatives *would not reduce community cohesion* because it would stay on the existing alignment and *would not* divide the community, separate residences from community facilities, or result in substantial growth. Access would be maintained at all businesses in the study area. Therefore, neither construction nor operation of the build alternatives would result in disproportionately high and adverse effects related to community cohesion on the Environmental Justice community.

Aesthetics

Disproportionate visual impacts during construction are anticipated to occur to the Environmental Justice community when compared to the rest of the county because these communities have been identified adjacent to and within the study area. As discussed in the aesthetic analysis prepared for the project, visual impacts from construction activities would result from the operation of heavy construction equipment, arrival and departure of heavy trucks, earth stockpiling and moving activities and construction equipment and staging areas that would not be compatible with the existing aesthetic character in the study area even though they would be temporary in nature. These activities would mainly be borne by the community that surrounds the project area, which has been identified as an Environmental Justice community. Minimization measures and adherence to Caltrans Standard Specifications would reduce temporary visual impacts

Relocations and Real Property Acquisition

All relocations and real property acquisitions are anticipated to disproportionately impact the Environmental Justice community when compared to the rest of the county because the parcels having been identified as requiring relocation all come from the census tracts adjacent to the project, which have been identified as an Environmental Justice community. All displacements will be in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and the California Relocation Act, which would reduce relocation impacts.

Benefits of the Proposed Project

The project will provide for alternative transportation options for adjacent residents through the following measures:

- Service enhancements to the Gold Country Connects (formerly Gold Country Stage) Route 5
- Support and encourage smart growth principles for land use projects that can reduce the need for vehicle trips and make it easy for people to walk, bike, and access transit.

- Planning and coordination with Caltrans District 3 to upgrade the pedestrian activated crossing devices/infrastructure at signalized intersections along the SR 49 corridor
- Pursue Federal Transit Administration 5311 (f) intercity transit funding for commuter bus service to connections to the Roseville/Sacramento and Yuba City/Marysville in coordination with PCTPA and Yuba Sutter Transit.
- The implementation of the planned Sac-Roseville Phase 1 triple track project Phase I project will allow the Capitol Corridor to operate three round trips (6 trains) daily between Sacramento and Roseville versus the one round trip currently offered.
- Review and analysis of the existing Park-n-Ride facilities at SR 49/Wolf Road and the SR 20/49/174 to identify possible enhancements including ZEV infrastructure to promote increased utilization.

Additionally, the project will create a Class III bicycle and pedestrian connection between the residential areas adjacent to La Barr Meadows Road, Lode Line Way, Young American Mine Road, Cornette Way, Wellswood Way, Upward Way, Smith Road, and the commercial land uses located in the vicinity of the McKnight Way Interchange in the City of Grass Valley.

With the the implementation of the proposed project, congestion along the corridor will be significantly reduced; therefore, improving air quality as well.

For other benefits and a more detailed discussion, please see Chapter 3, Climate Change - Planning Vision for Reducing Vehicle Miles Traveled in the SR 49 Corridor).

Avoidance, Minimization, and/or Mitigation Measures Aesthetics

Implementation of the following measures will reduce visual impacts resulting from construction activities to the Environmental Justice community.

- The Resident Engineer will coordinate the development of contour grading plans including, removal, stockpiling, of materials and the application of topsoil and duff with the District Landscape Architect.
- Local topsoil and duff material within the grading limits will be identified on the plans, removed or excavated, stockpiled, and reapplied. This is to be performed on all projects that include grading or earthwork unless the materials are determined to be unsuitable.
- Replanting must reflect adjacent communities and natural surroundings; buffer/screen objectionable or distracting views of the highway facility for homes, schools, parks, etc.; soften visual impacts of large structures or graded slopes; frame or enhance good views.

- Aesthetic treatments on any retaining wall or sound walls that would help the structural element blend into the environment will be considered.
- Areas that would require ground disturbance by removing vegetation shall be restored and rectified respectively before completion of the construction project. The trees and vegetation shall be protected, where feasible. Vegetation removal shall be limited to the extent necessary to construct the project.
- Any vegetation that is removed would need to be replaced with appropriate vegetation that is indigenous to the area.
- Any work that requires vegetation removal near the stream channel will be replaced with appropriate vegetation that is indigenous to the area.
- All disturbed areas including access roads shall be re-graded to their pre-construction profiles and contours.
- Where there may be mature trees and vegetation, measures will be taken to preserve them.
- If the project requires equipment/staging areas, then Caltrans' Special Provision Section 5.1 applies which indicates that the contractor would be responsible for securing locations for staging and storage. At the end of construction all areas used for staging, access, or other construction activities shall be repaired under Section 5-1.36 "Property and Facility Preservation."

Based on the above discussions and analysis, the build alternatives will not cause disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of EO 12898. No further environmental justice analysis is required.

Air Quality

Short-Term (Construction)

Implementation of the following measures will reduce Air Quality impacts resulting from construction activities to the Environmental Justice community.

Construction impacts to air quality are short-term in duration and, therefore, will not result in long-term adverse conditions. Implementation of the following measures will reduce air quality impacts resulting from construction activities.

- Caltrans standard specifications include the requirement to minimize or eliminate dust through application of water or dust palliatives. Control measures will be implemented as

specified in Caltrans 2018 Standard Specifications Section 10-5 “Dust Control”, Section 14-9 “Air Quality” and Section 18 “Dust Palliatives.”

Long-Term (Operational)

Long term air quality within the project area is anticipated to improve by opening year due to the improvements in mobility thus reducing congestion along the corridor, which would be beneficial to the Environmental Justice community and the rest of Nevada County.

Based on the above discussions and analysis, the build alternatives will not cause disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of EO 12898. No further environmental justice analysis is required.

Noise

Short-Term (Construction)

Implementation of the following measures will reduce Noise impacts resulting from construction activities to the Environmental Justice community.

- Caltrans Standard Specification Section 14-8.02 “Noise Control.”

Abatement Measures (Long-term)

Implementation of the following measures will reduce long-term Noise impacts resulting from the project activities to the Environmental Justice community.

A noise barrier was evaluated for impacted receivers at Tall Pines Estates, Activity Category land use B. The barrier evaluated is labeled as Barrier SB1 and was found to be acoustically feasible, providing at least five dBA of noise reduction.

The Department intends to incorporate noise abatement in the form of a barrier at approximately 112+00.00 to 128+00.00, with an average height of 10 feet. Calculations based on preliminary design data show that the barrier will reduce noise levels by seven dBA for 33 residences at a cost of \$3,531,000

Based on the above discussions and analysis, the build alternatives will not cause disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of EO 12898. No further environmental justice analysis is required.

Relocations and Real Property Acquisition

In an effort to avoid and/or minimize project related impacts that would require relocations, the project design team has minimized right-of-way impacts, which has reduced the number of parcels affected by:

- increasing the side slopes for cut and fill to be as steep as 2:1
- the proposed roadway will follow the existing roadway profile which will minimize elevation grade differences which would have required more right-of-way being incorporated into the project

Implementation of the following measures will reduce relocation impacts resulting from the project to the Environmental Justice community.

As discussed in Chapter 2 (Relocations and Real Property Acquisitions), relocation impacts within the project area are noncomplex and adequate relocation resources are available for displacees and 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 will 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 will be entitled to moving expenses. All benefits and services will 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 will be available to all displacees without discrimination.

In addition, the Nonresidential Relocation Assistance Program (RAP) provides assistance to businesses, farms, and nonprofit organizations in locating suitable replacement properties and reimbursement for certain costs involved in relocation. The RAP will provide current lists of properties offered for sale or rent, suitable for a particular businesses specific relocation needs.

Based on the above discussions and analysis, the build alternatives will not cause disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of EO 12898. No further environmental justice analysis is required.

2.2.6. Traffic and Transportation/Pedestrian and Bicycle Facilities

Regulatory Setting

The Department, 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 (November 2019) was prepared for the State Route (SR) 49 Corridor Improvement project in Nevada County. The purpose of this report is to provide information regarding the effects of traffic and transportation conditions now and in the future so that final transportation decisions will be made in the public interest.

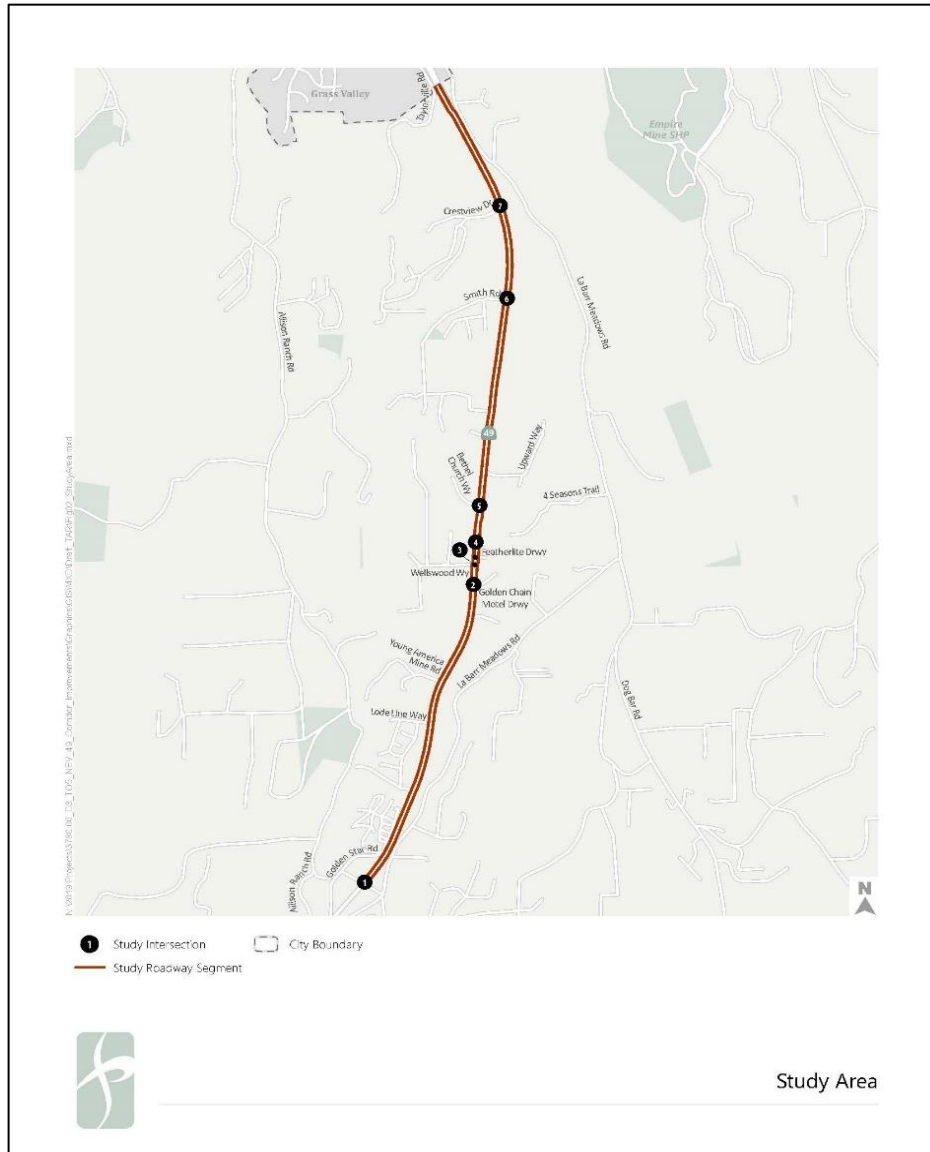


Figure 2-8 shows the **study area** extends along SR 49 from La Barr Meadows Road/Allison Ranch Road (PM 10.6) to the Grass Valley city limits (PM 13.3), which is 0.4 mile south of the McKnight Way overcrossing. Adjacent land uses are primarily rural and semi-rural residential homes, with some retail and industrial facilities.

Figure 2-8. Project Study Area

The transportation analysis study locations are composed of highway segments and intersections. The study area extends along SR 49 from La Barr Meadows

Road/Allison Ranch Road (PM 10.6) to the Grass Valley city limits (PM 13.3), which is 0.4 mile south of the McKnight Way overcrossing. **Figure 2-8** shows the highway segments and intersections in the study area.

The study highway segments are listed below.

- | | |
|---|----------------------------------|
| 1. La Barr Meadows Road/Allison Ranch Road to Wellswood Way | 4. Smith Road to Crestview Drive |
| 2. Wellswood Way to Bethel Church Way | 5. Crestview Drive to PM 13.3 |
| 3. Bethel Church Way to Smith Road | |

The study intersections are listed below.

1. SR 49/La Barr Meadows Road/Allison Ranch Road
2. SR 49/Golden Chain Motel Driveway
3. SR 49/Wellswood Way
4. SR 49/Featherlite Driveway
5. SR 49/Bethel Church Way
6. SR 49/Smith Road
7. SR 49/Crestview Drive

At the south end of the study area, SR 49 has a five-lane cross-section at the signalized intersection with La Barr Meadows Road/Allison Ranch Road. Approximately 0.25 mile north of the signal, SR 49 transitions to a two-lane highway with left-turn pocket lanes at some intersections. All intersections north of La Barr Meadows Road/Allison Ranch Road have side-street stop control. The two-lane highway section has paved shoulders that vary from four to six feet in width. At the north end of the study area, SR 49 transitions to a four-lane freeway at about 0.4 mile south of the McKnight Way interchange.

LOS Criteria

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 and congestion). The tables below show highway thresholds for two-lane and multi-lane facilities.

LOS	Description	AS ¹	PF ²
A	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to pass.	> 55	≤ 35
B	Operating speeds are high. The limitations in passing becomes noticeable	> 50 to 55	> 35 to 50
C	Operating speeds are noticeably lower than free-flow speed and most vehicles travel in platoons.	> 45 to 50	> 50 to 65
D	Vehicle platooning increases, but passing opportunities are limited.	> 40 to 45	> 65 to 80
E	Operation is approaching capacity. There are virtually no passing opportunities. Speeds are severely curtailed.	< 35	> 80
F	Represents a breakdown in flow with unstable operating conditions.	v/c > 1 ³	

Notes: 1. AS, average speed, is reported in miles per hour.
2. PF, percent followers, is reported as a percentage.
3. Volume-to-capacity ratio is greater than 1 (demand exceeds capacity).
Source: *Highway Capacity Manual, 6th Edition* (Transportation Research Board, 2019)

Table 2-10. Two-Lane Highway LOS Thresholds

LOS	Description	Density ¹
A	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver.	< 11
B	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.	> 11 to 18
C	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.	> 18 to 26
D	Speeds decline slightly with increasing flows. Freedom to maneuver within the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort.	> 26 to 35
E	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing.	> 35 to 45
F	Represents a breakdown in flow.	> 45 or v/c > 1 ²

Notes: 1. Density is reported in passenger cars per lane per mile.
2. Volume-to-capacity ratio is greater than 1 (demand exceeds capacity).
Source: *Highway Capacity Manual, 6th Edition* (Transportation Research Board, 2019)

Table 2-11. Multilane Highway LOS Thresholds

Existing Conditions

Existing Conditions - Highway Operations

Highway operations were analyzed for existing (2018) conditions under AM and PM peak hour conditions. **Table 2-7** shows the **segment LOS, average travel speed (AS), percent followers (PF), and travel time** under existing (2018) conditions.

Table 2-12: Existing Conditions - Highway Operations (2018)

Segment	Direction	LOS (AS/PF) ¹	
		AM	PM
La Barr Meadows Road/Allison Ranch Road to Wellwood Way	Northbound	<u>E (54/82%)</u>	D (56/78%)
	Southbound	D (55/72%)	<u>E (55/83%)</u>
Wellwood Way to Bethel Church Way	Northbound	<u>E (58/84%)</u>	<u>E (59/80%)</u>
	Southbound	D (59/75%)	<u>E (59/86%)</u>
Bethel Church Way to Smith Road	Northbound	<u>E (54/83%)</u>	<u>E (55/83%)</u>
	Southbound	D (54/74%)	<u>E (54/87%)</u>
Smith Road to Crestview Drive	Northbound	<u>E (57/82%)</u>	D (57/78%)
	Southbound	D (58/72%)	<u>E (57/83%)</u>
Crestview Drive to PM 13.3	Northbound	<u>E (56/83%)</u>	D (57/79%)
	Southbound	D (58/72%)	<u>E (57/83%)</u>

Notes: Bold and underline font indicate deficient LOS E or F conditions.
1. For two-lane highway segments, the performance measures of average speed (AS) in miles per hour and percent followers (PF) are reported in parentheses. LOS is determined by the worse LOS based on each performance measure.
Source: W&S Solutions (2019)

Table 2-12 shows that during the AM peak hour, SR 49 operates with LOS E conditions in the northbound direction and LOS D in the southbound direction. During the PM peak hour, all segments operate at LOS E conditions, and the PF is approximately the same – 80 to 85% – in both directions.

Existing Conditions - Intersection Operations

Intersection operations were analyzed for existing (2018) conditions under AM and PM peak hour conditions using the Synchro software. **Table 2-13** shows the **intersection LOS** and **average delay** under existing (2018) conditions.

Table 2-13. Existing Conditions - Intersection Operations (2018)

Intersection	Traffic Control	LOS/Delay	
		AM	PM
1. SR 49/La Barr Meadows Road/Allison Ranch Road	Signalized	B/17	B/18
2. SR 49/Golden Chain Motel Driveway	Side Street Stop	D/25 (WB)	<u>F/58</u> (WB)
3. SR 49/Wellswood Way	Side Street Stop	<u>E/46</u> (EB)	<u>F/144</u> (EB)
4. SR 49/Featherlite Driveway	Side Street Stop	A/0 (WB)	C/20 (WB)
5. SR 49/Bethel Church Way	Side Street Stop	<u>F/75</u> (EB)	D/28 (EB)
6. SR 49/Smith Road	Side Street Stop	<u>F/104</u> (EB)	<u>F/91</u> (EB)
7. SR 49/Crestview Drive	Side Street Stop	<u>F/130</u> (EB)	<u>F/177</u> (EB)

Note: Delay is reported in seconds per vehicle. Bold and underline font indicate deficient LOS E or F conditions.
Source: W & S Solutions (2019)

Table 2-13 shows that under existing (2018) conditions, five of the seven study intersection have deficient operations. Two study intersections – Smith Road and Crestview Drive – operate at LOS F in both the AM and PM peak hours. The Golden Chain Motel Driveway has LOS F during the AM peak hour, and Bethel Church Way has LOS F during the PM peak hour. At Wellswood Way, the AM peak hour LOS is E, and the PM peak hour LOS is F.

Table 2-14 reports **queue lengths** for intersection turn pockets on SR 49 under existing (2018) conditions. Only queues for SR 49/La Barr Meadows Road/Allison Ranch Road are shown in the table because queues for left-turn pockets on SR 49 at the other study intersections are zero.

Table 2-14: Intersection Queue Length – Existing Year (2018)

Intersection	Movement	Storage Length	Queue Length	
			AM	PM
SR 49/La Barr Meadows Road/ Allison Ranch Road	Northbound Left	425	50	75
	Southbound Left	380	50	100

Notes: Storage and queue lengths are reported in feet. For AM and PM, the 95th percentile queue length from Synchro is reported.
Source: W & S Solutions (2019)

Table 2-14 shows that the highest queue length during existing (2018) conditions is estimated as 100 feet.

Existing Conditions - Roadway Safety

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 2016 to December 2018. **Table 2-15** summarizes the number of collisions by severity and compares the collision rate to statewide averages.

Table 2-15. Collision Rate

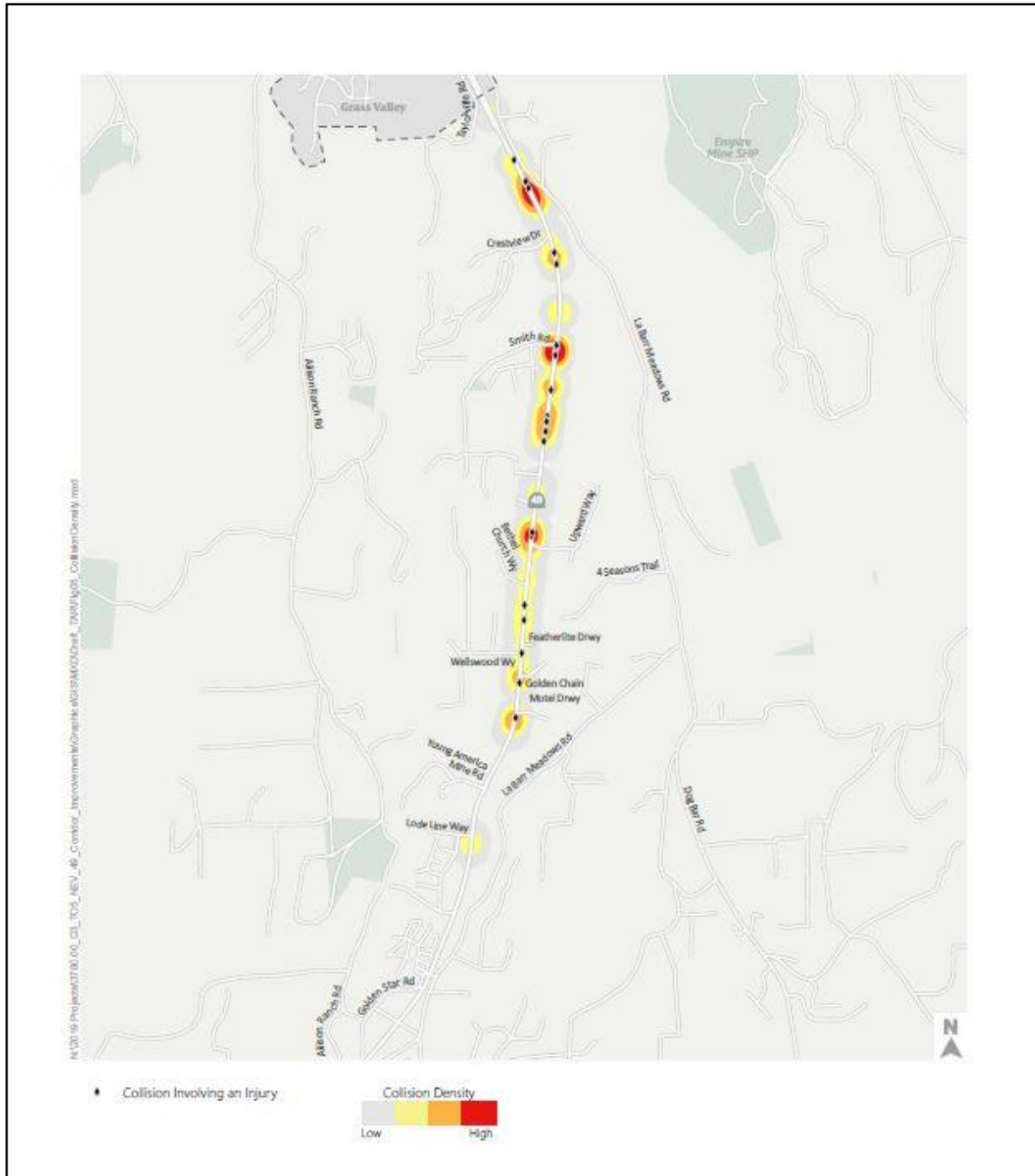
Segment	Total Collisions	Total Fatality Collisions	Total Injury Collisions	Total Fatality and Injury Collisions	Actual Collision Rate ¹			Average Collision Rate ¹		
					F	F&I	Total	F	F&I	Total
SR 49 (PM 11.1 to 13.3) ¹	62	0	21	21	0.000	0.34	1.00	0.014	0.42	1.02

Notes: The collision rate is in collisions per million vehicle-miles. "F" refers to the fatality collision rate, and "F&I" refers to the fatality and injury collision rate.
1. The PM limits correspond to 0.5 mile north of La Barr Meadows Road/Allison Ranch Road to 0.4 mile south of McKnight Way.

Source: TASAS Table B Summary from January 2016 to December 2018, Caltrans (2019)

As shown in **Figure 2-9**, three areas have the highest concentrations of collisions: just north of Upward Way, just south of Smith Road, and at Kilroy's Towing Driveway north of Crestview Drive. The first and third locations do not have left-turn pockets on SR 49, so through drivers may not be expecting slowing vehicles preparing to turn left at these locations. Smith Road has a left-turn pocket, but its location at the bottom of a grade may be a factor.

Figure 2-9. Density of Collisions



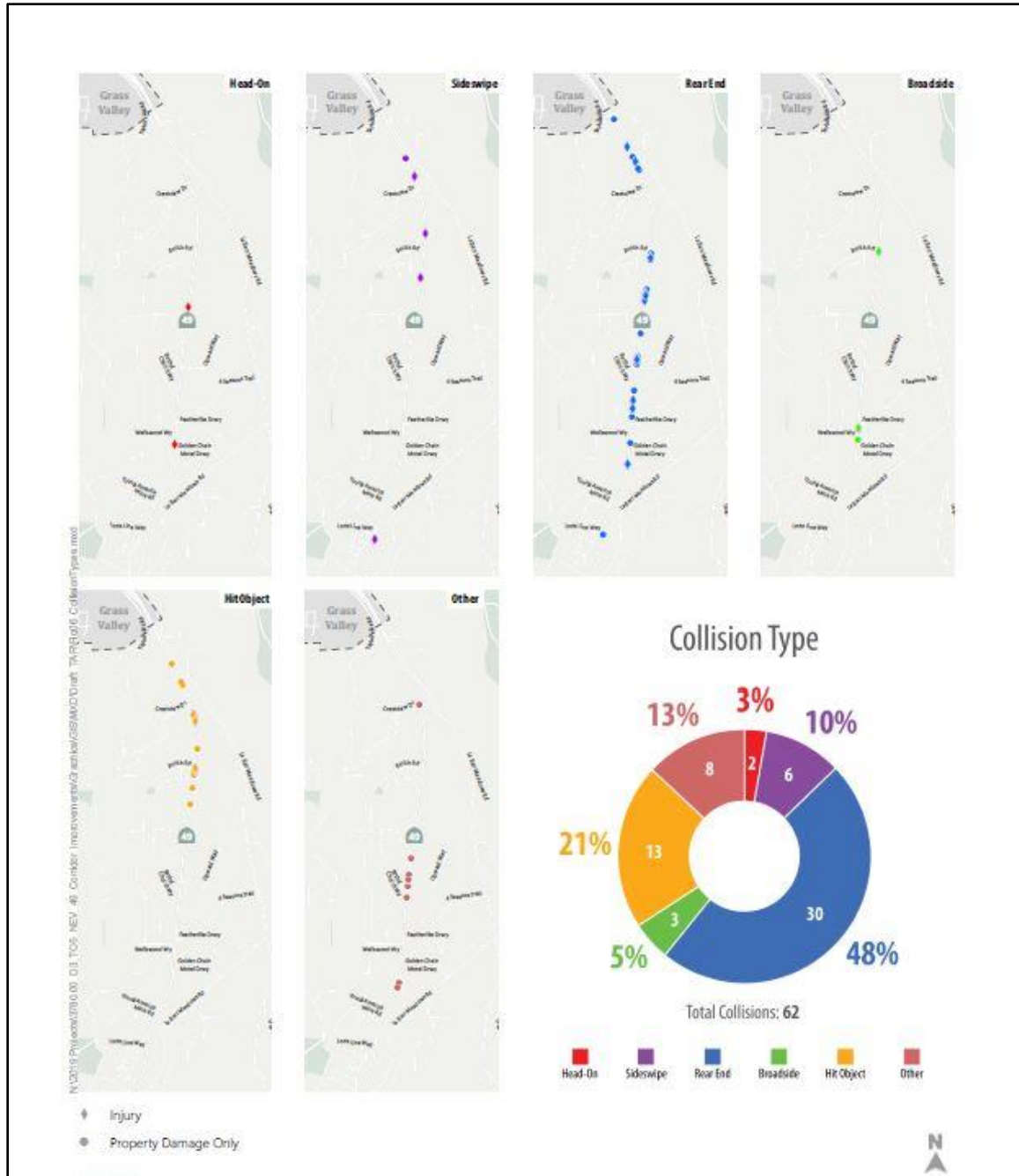


Figure 2-10 Collisions by Type

Figure 2-10 shows that the most frequent collision type is rear end (48 percent), followed by hit object (21 percent) and other (13 percent). The collision types at the high frequency crash locations are primarily rear-end collisions. Only two head-on collisions occurred in the three-year period. Except for one collision, the sideswipe and hit object collisions all are located north of Bethel Church Way. The three broadside collisions occurred at study intersections: Smith Road, Wellswood Way, and Golden Chain Motel Driveway.

Existing Conditions - Transit System

Gold Country Stage provides bus service along SR 49 in the study area. SR 49 in Nevada County serves as an interregional public transit corridor providing connections to Placer County Transit and Amtrak Capital Corridor Inner-City Passenger Rail, at the Auburn - Conheim Multimodal Station. Route 5 provides service six times per day in each direction (with about two-hour headways) on weekdays between the Tinloy Transit Center in Grass Valley and the Auburn-Conheim Multi-modal station. Route AS provides four round trips on Saturdays on SR 49 between the Tinloy Transit Center in Grass Valley and Alta Sierra. Routes 5 and AS have stops on SR 49 at Bethel Church Way and Wellswood Way. Stops are also located on the frontage road adjacent to the La Barr Meadows Road/Allison Ranch Road intersection.

Existing Conditions - Bicycle System

The SR 49 corridor does not have designated bicycle facilities. Between the intersections of Alta Sierra Drive, La Barr Meadows Road, and the McKnight Way Interchange, SR 49 is heavily utilized by pedestrians and bicyclists. However, the Nevada County Active Transportation Plan (2019) identifies the need for Class III Multi-use shoulders along SR 49 from the current northern project limits, south of the McKnight Way Interchange, all the way to the Nevada County/Placer County Line. Currently, bicycles can use the paved shoulder to travel adjacent to the motor vehicle lanes. Shoulder width along the corridor varies from four to six feet. La Barr Meadows Road, which parallels SR 49 to the east, has two- to four-foot paved shoulders for about half of the study area, Dog Bar Road to McKnight Way. South of Dog Bar Road, no paved shoulders are provided.

Adjacent to the project there is an existing Class III multi-use bicycle lane on Dog Bar Road from the La Barr Meadows Road/Dog Bar Road transition to Rattlesnake Road. This segment of SR 49 south of the McKnight Way Interchange is also utilized by recreational cyclists who travel along the shoulder of the highway to access Auburn Road as part of a popular recreational loop. Auburn Road is also identified in the Nevada County ATP as planned for segments of Class III multi-use shoulder and Class II Bike Lanes, connecting to McCourtney Road near the Nevada County Fairgrounds.

Existing Conditions - Pedestrian System

The SR 49 corridor in the study area does not have designated pedestrian facilities. Pedestrians can use the paved or unpaved shoulder. Paved shoulder width along the corridor varies from four to six feet.

In the 2018 traffic counts, no pedestrians were observed during the 12-hour period from six AM to six PM at four of the study intersections. Two pedestrians were counted in the 12-hour period at Featherlite Driveway, and three pedestrians each were counted at Wellswood Way and Crestview Drive.

Existing Conditions - Freight System

SR 49 is a Terminal Access route for truck traffic in the study area. Terminal Access routes accommodate STAA trucks. SR 49 provides access for freight and lumber trucks and connects industrial areas in Grass Valley and Nevada City to the rest of the state.

Daily truck volume on SR 49 is estimated at about 1,050 trucks per day, using the total volume measured in May 2018 and the reported truck percentage of 3.6 percent.

Horizon Year Conditions (2044)

Horizon Year - Highway Operations

Highway operations were analyzed for horizon year (2044) conditions during the AM and PM peak hours. **Table 2-16** shows the **segment LOS** and associated performance measures for each phase/alternative in the **northbound direction**.

Table 2-16. Highway Operations Northbound

Segment	Phase 1 ¹		Phase 2		Alternatives 3A & 3B		Alternative 4/No Build ²	
	AM	PM	AM	PM	AM	PM	AM	PM
La Barr Meadows Road/Allison Ranch Road to Wellswood Way	C (18)	B (14)	C (18)	B (14)	C (19)	B (15)	<u>E (54/84%)</u>	D (56/80%)
Wellswood Way to Bethel Church Way	C (18)	B (14)	C (18)	B (14)	-	-	<u>E (58/86%)</u>	<u>E (59/82%)</u>
Wellswood Way to Featherlite Driveway	-	-	-	-	C (19)	B (15)	-	-
Featherlite Driveway to Smith Road	-	-	-	-	C (20)	B (16)	-	-
Bethel Church Way to Smith Road	C (19)	B (15)	C (19)	B (15)	-	-	<u>E (52/88%)</u>	<u>E (54/85%)</u>
Smith Road to Crestview Drive	B (18)	B (15)	B (18)	B (15)	-	-	<u>E (57/84%)</u>	<u>E (57/81%)</u>
Smith Road to PM 13.3	-	-	-	-	C (19)	B (16)	-	-
Crestview Drive to PM 13.3	C (19)	B (15)	C (19)	B (15)	-	-	<u>E (56/85%)</u>	<u>E (56/81%)</u>

Notes: 1. For multilane highway segments (Phases 1 & 2 and Alternatives 3A & 3B), the performance measure of density in vehicles per mile per lane is reported in parentheses.
2. For two-lane highway segments (Alternative 4/No Build), the performance measures of average speed in miles per hour and percent followers are reported in parentheses. LOS is determined by the worse LOS based on each performance measure.
Bold and underline font indicates deficient LOS E or F conditions.

Source: W&S Solutions (2019)

Table 2-16 shows that operations under the horizon year (2044) would worsen under Alternative 4/No Build due to increasing traffic volumes. Compared to existing (2018) conditions, all segments but one would worsen from LOS D to E in the northbound direction. In the northbound direction, the widening to two lanes would improve conditions to LOS C or better during both peak hours.

Highway operations were analyzed for horizon year (2044) conditions during the AM and PM peak hours. **Table 2-17** shows the **segment LOS** and associated performance measures for each phase/alternative in the **southbound direction**.

Table 2-17. Highway Operations Southbound

Segment	Phase 1 ¹		Phase 2 ²		Alternatives 3A & 3B ²		Alternative 4/No Build ¹	
	AM	PM	AM	PM	AM	PM	AM	PM
La Barr Meadows Road/Allison Ranch Rd to Wellswood Way	D (55/77%)	<u>E (55/85%)</u>	A (11)	C (20)	A (11)	C (20)	D (55/76%)	<u>E (55/85%)</u>
Wellswood Way to Bethel Church Way	D (59/79%)	<u>E (59/87%)</u>	A (11)	C (19)	-	-	D (59/78%)	<u>E (59/87%)</u>
Wellswood Way to Featherlite Driveway	-	-	-	-	A (11)	C (21)	-	-
Featherlite Driveway to Smith Road	-	-	-	-	B (12)	C (21)	-	-
Bethel Church Way to Smith Road	<u>E (53/81%)</u>	<u>E (54/89%)</u>	A (11)	C (20)	-	-	<u>E (53/81%)</u>	<u>E (54/89%)</u>
Smith Road to Crestview Drive	D (57/76%)	<u>E (57/85%)</u>	A (11)	C (20)	-	-	D (57/76%)	<u>E (57/85%)</u>
Smith Road to PM 13.3	-	-	-	-	A (11)	C (20)	-	-
Crestview Drive to PM 13.3	D (57/76%)	<u>E (57/85%)</u>	A (11)	C (20)	-	-	D (58/75%)	<u>E (57/85%)</u>

Notes: 1. For multilane highway segments (Phase 2 and Alternatives 3A & 3B), the performance measure of density in vehicles per mile per lane is reported in parentheses.
2. For two-lane highway segments (Phase 1 & Alternative 4/No Build), the performance measures of average speed in miles per hour and percent followers are reported in parentheses. LOS is determined by the worse LOS based on each performance measure.
Bold and underline font indicates deficient LOS E or F conditions.

Source: W&S Solutions (2019)

Table 2-17 shows that in the southbound direction, one segment would worsen from LOS D to E during the AM peak hour, but the PM peak hour operations would remain at LOS E. In the southbound direction, the widening to two lanes would provide LOS B or better conditions during the AM peak hour and LOS C conditions during the PM peak hour. Under Phase 1, the southbound LOS would remain the same as Alternative 4/No Build. Although the demand volume would be slightly higher, the percent followers would remain the same for all segments. As a result, Alternative 4/No Build would have project impacts under horizon year (2044) conditions.

Table 2-18 presents the **travel time for highway segments** for all alternatives under horizon year (2044) conditions.

Table 2-18. Corridor Travel Time

Direction	Phase 1		Phase 2		Alternatives 3A & 3B ²		Alternative 4/No Build	
	AM	PM	AM	PM	AM	PM	AM	PM
Northbound	3.0	3.0	3.0	3.0	3.6/3.4	3.4/3.2	3.0	2.9
Southbound	3.2	3.3	3.2	3.7	3.5/3.4	4.5/4.1	3.2	3.3

Note: 1. Travel time is reported in minutes.
2. For Alternatives 3A and 3B, travel time is reported as 3A/3B, where 3A has signals and 3B has roundabouts at the Wellswood Way and Smith Road intersections.
Source: W&S Solutions (2019)

Table 2-18 shows that compared to existing conditions, northbound travel times would remain approximately the same under Phase 1 and Alternative 4/No Build. Southbound PM peak hour travel times would decrease by about 20 seconds under Phase 2 due to higher demand volumes at the La Barr Meadows Road/Allison Ranch Road intersection. Under Alternatives 3A and 3B, AM peak hour travel times would increase from 15 to 30 seconds due to delay at the new all-way controlled intersections. During the PM peak hour, the northbound travel time would increase about 10 to 20 seconds, but southbound travel time would increase up to about 45 seconds. This reflects the higher southbound demand volumes. Alternative 3B (roundabout) would have longer travel times than Alternatives 3A (signals).

Horizon Year - Intersection Operations

Intersection operations were analyzed for horizon year (2044) conditions under AM and PM peak hour conditions. **Table 2-19** reports the **intersection LOS** and average delay. The roundabout operations analysis was checked using the Sidra software and similar results to those reported in **Table 2-19** were found.

Table 2-19. Intersection Operations

Intersection		Phase 1		Phase 2		Alternatives 3A & 3B		Alternative 4/No Build	
		AM	PM	AM	PM	AM	PM	AM	PM
1. SR 49/La Barr Meadows Rd/ Allison Ranch Rd		C/23	C/24	C/23	C/31	C/28	D/35	B/19	C/23
2. SR 49/Golden Chain Motel Drwy		D/31 (WB)	D/27 (WB)	D/29 (WB)	C/23 (WB)	C/18 (WB)	C/16 (WB)	<u>E/48</u> (WB)	<u>E/50</u> (WB)
3. SR 49/ Wellswood Way	Side Street Stop	C/22 (EB)	D/34 (EB)	C/18 (EB)	<u>E/42</u> (EB)	-	-	<u>E/38</u> (EB)	<u>F/67</u> (EB)
	Roundabout	-	-	-	-	B/13	C/15	-	-
	Signal	-	-	-	-	A/9	A/9	-	-
4. SR 49/Featherlite Drwy		<u>E/37</u> (WB)	D/32 (WB)	D/33 (WB)	D/27 (WB)	C/18 (WB)	C/16 (WB)	<u>F/51</u> (WB)	<u>F/63</u> (WB)
5. SR 49/Bethel Church Way		D/29 (WB)	<u>E/39</u> (EB)	D/27 (WB)	<u>F/72</u> (EB)	-	-	<u>F/56</u> (EB)	<u>F/87</u> (EB)
6. SR 49/Smith Rd	Side Street Stop	D/27 (EB)	D/34 (EB)	D/27 (EB)	<u>E/44</u> (EB)	-	-	<u>F/86</u> (EB)	<u>F/75</u> (EB)
	Roundabout	-	-	-	-	B/13	C/16	-	-
	Signal	-	-	-	-	A/7	A/8	-	-
7. SR 49/Crestview Dr		D/27 (EB)	<u>E/36</u> (EB)	D/27 (EB)	<u>F/58</u> (EB)	-	-	<u>F/88</u> (EB)	<u>F/105</u> (EB)

Note: Delay is reported in seconds per vehicle. Bold and underline font indicates deficient LOS E or F conditions.
Source: W & S Solutions (2019)

Table 2-19 shows that with the increase in traffic volumes from existing (2018) conditions, the average intersection delay would increase with the number of deficient intersections (LOS E or F) increasing from five to six under Alternative 4/No Build. Five study intersections would have LOS E or F conditions during both peak hours. With the addition of a northbound lane, intersection operations improve under Phase 1, but three intersections would have deficient conditions: Featherlite Driveway during the AM peak hour and Bethel Church Way and Crestview Drive during the PM peak hour. The addition of both northbound and southbound lanes in Phase 2 would increase conflicting traffic volumes such that four intersections would be deficient: Wellswood Way, Bethel Church Way, Smith Road, and Crestview Drive. The deficient intersections under Phases 1 and 2 would have a lower intersection delay than under Alternative 4/No Build, so neither Phase 1 or Phase 2 would have intersection project impacts under horizon year (2044) conditions.

Despite the highest traffic volumes, Both alternatives would have LOS D or better conditions at all study intersections. The addition of the median barrier, which prohibits turns at some study intersections, eliminates the movements with the highest delays in Phases 1 and 2. Alternative 3B (roundabout) would have LOS B during the AM peak hour and LOS C during the PM peak hour at the affected intersections (Wellswood Way and Smith Road). Alternative 3A (signal) would provide LOS A conditions at both intersections during both peak hours. Since all

intersections would operate at LOS D or better, the alternatives would have no deficient locations and no project impacts under horizon year (2044) conditions.

Table 2-20 shows the **queue length** under horizon year (2044) conditions.

Table 2-20. Intersection Queue Length

Intersection	Movement	Phase 1		Phase 2		Alternatives 3A and 3B ¹		Alternative 4/No Build	
		AM	PM	AM	PM	AM	PM	AM	PM
1. SR 49/La Barr Meadows Rd/Allison Ranch Rd	NB Left	50	75	50	75	50	75	50	75
	SB Left	50	125	50	125	75	150	50	100
2. SR 49/Golden Chain Motel Driveway	SB Left	25	25	25	25	-	-	25	25
3. SR 49/Wellswood Way	NB Left	25	25	25	25	50	50	25	25
	SB U	-	-	-	-	125	175		
4. SR 49/Featherlite Driveway	SB Left	25	25	25	25	-	-	25	25
5. SR 49/Bethel Church Way	NB Left	25	25	25	50	-	-		
	SB Left	25	25	25	25	-	-	25	25
6. SR 49/Smith Rd	NB Left	25	25	25	25	50	125	25	25
7. SR 49/Crestview Dr	NB Left	25	25	25	25	-	-	25	25

Notes: Queue is reported in feet. The results are from the Synchro model.
 1. The queue lengths at Intersections 3 and 6 are from Alternatives 3A and 3BB (traffic signals) since Alternatives 3A and 3BA (roundabout) does not have left turn pockets.
 Source: W & S Solutions, (2019)

Table 2-20 shows that queues would be longest at the signal intersections (La Barr Meadows Road under all phases/alternatives and Wellswood Way and Smith Road under Alternatives 3A and 3B). At the unsignalized intersections, queues for the uncontrolled left turns from SR 49 would be very low – most locations with less than one vehicle, on average. All queues would be contained within the available storage length.

Horizon Year - Roadway Safety

The continuous two-way left-turn lane proposed in Phases 1 and 2 will:

- Allow drivers to make a left turn from SR 49 to access homes, businesses, cross streets, etc. via a lane other than the through lane to decelerate and stop, if needed, to complete their turning movement.
- Allow drivers to make a left turn onto SR 49 from homes, businesses, cross streets, etc. into a lane other than the through lane which would allow them to wait for an acceptable gap or accelerate and join through traffic in their direction of travel.

- Act as a buffer for inattentive drivers to self-correct prior to entering the opposing lane of traffic.
- Allow vehicles to use the center lane to slow and prepare for a turn, which alerts other drivers to act accordingly.

The alternatives would provide a median barrier, which would likely further reduce head-on collisions. The median barrier would eliminate conflict points at driveway intersections where major street left-turn, minor street left-turn, and minor street through movements would be prohibited. These movements would be diverted to make U-turns at the new roundabout or signal intersections at Wellswood Way and Smith Road.

For Alternative 3B (roundabouts) would have a lower rate of severe collisions compared to Alternative 3A (signals). This is due to the lower speed (about 20 mph) needed to traverse the roundabout intersection compared to a traffic signal, where drivers can maintain facility free-flow speed of 55 mph when the signal is green. In addition, roundabout intersections minimize conflict points so that the potential for broadside collisions is reduced.

To enhance safety on the corridor, the following features should be considered in project design for the build alternatives.

- Shoulder and centerline rumble strips (along both sides of the two-way left-turn lane in Phases 1 and 2) 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
- For Phases 1 and 2, Two-Way Left Turn Only signs (R3-9b) as an option per CA MUTCD 2B.24 and associated pavement markings per CA MUTCD Figure 3B-7(CA) at 0.5-mile intervals (the oversized 36-inch by 48-inch sign to provide a higher level of visibility)

Horizon Year - Transit System

Gold Country Stage Bus Service provides transit service along SR 49. The current stops at Bethel Church Way and Wellswood Way use the existing shoulders within the project area. At La Barr Meadows Road/Allison Ranch Road, the bus stops are located on the frontage roads on both sides of the intersection. Accessing the stop locations increases the bus travel time since the bus must exit and re-enter SR 49.

Horizon Year - Bicycle System

The project would widen the roadway to provide an ten-foot paved shoulder from the current four to six feet to improve the comfort and convenience of bicyclists. This improvement is consistent with the Nevada County Active Transportation Plan (July 2019) which calls for a Class III Multi-Use Shoulder along SR 49 in the project area.

The project would be widened to provide a second lane. As a result, motorists traveling in the right lane could change into the left lane, if it is available, when passing bicyclists who are traveling on the shoulder.

The SR 49 Corridor Improvement Project eliminates the gap that currently exists between SR 49 south of the McKnight Way Interchange and the previously completed SR 49/La Barr Meadows improvement project (Post Mile 10.8), creating a Class III bicycle and pedestrian connection between the residential areas adjacent to La Barr Meadows Road, Lode Line Way, Young American Mine Road, Cornette Way, Wellswood Way, Upward Way, Smith Road, and the commercial land uses located in the vicinity of the Crestview Drive Interchange in the City of Grass Valley.

Horizon Year - Pedestrian System

Similar to bicyclists, pedestrians would benefit from the wider shoulders to be constructed under the project. Where a second lane is added to the highway, motorists traveling in the right lane could change into the left lane, if it is available, when passing pedestrians who are traveling on the shoulder.

Horizon Year - Freight System

The project would be constructed to accommodate the Surface Transportation Assistance Act (STAA) trucks as required by SR 49's designation as a Terminal Access route, where STAA trucks may exit off the interstate and travel onto State and Local routes.

Environmental Consequences

No Build Alternative

Under the No-Build Alternative, no operations or mobility improvements would be made. LOS would continue to deteriorate, and the corridor congestion would continue unabated.

Build Alternatives

The average travel times are approximately three minutes in both directions during peak hours. Slightly longer travel times (11 seconds) and lower speed (approx. 2-5 mph) in the southbound direction is due to the signalized intersection at La Barr Meadows Road/Allison Ranch Road.

Compared to existing conditions, northbound travel times would remain approximately the same under Phase 1 and Alternative 4 (no-build). Southbound PM peak hour travel times would decrease by about 20 seconds under Phase 2 due to higher demand volumes at the La Barr Meadows Road/Allison Ranch Road intersection. Under both Alternatives, AM peak hour travel times would increase from 15 to 30 seconds due to delay at the new all-way controlled intersections. During the PM peak hour, the northbound travel time would increase about 10 to 20 seconds, but southbound travel time would increase up to about 45 seconds. This reflects

the higher southbound demand volumes. The signal option would have longer travel times than the roundabout option.

Operations under the horizon year (2044) would worsen under the no-build alternative (Alternative 4) due to increasing traffic volumes. Compared to existing (2018) conditions, all segments but one would worsen from LOS D to E in the northbound direction. In the southbound direction, one segment would worsen from LOS D to E during the AM peak hour, but the PM peak hour operations would remain at LOS E.

Traffic volumes will increase along SR-49 over existing volumes under all Alternatives, including the future no build.

With the increase in traffic volumes from existing (2018) conditions, the average intersection delay would increase with the number of deficient intersections (LOS E or F) increasing from five to six under the no-build alternative (Alternative 4). Both Alternatives would have LOS D or better conditions at all study intersections. The addition of the median barrier, which prohibits turns at some study intersections, eliminates the movements with the highest delays in Phases 1 and 2. Alternative 3B would have LOS B during the AM peak hour and LOS C during the PM peak hour at the affected intersections (Wellswood Way and Smith Road). Alternative 3A would provide LOS A conditions at both intersections during both peak hours.

Once the SR 49 Corridor Improvement Project is completed the next key bicycle/pedestrian improvement on SR 49 will be to construct 10' shoulders from the southern terminus of the previous SR 49/La Barr Meadows Road improvement project to the commercial land uses located off of SR 49/Alta Sierra Drive. This would provide pedestrian and bicycle connectivity between the unincorporated community of Alta Sierra (census designated place, approximately 7,207 population) and the City of Grass Valley, as well as connections for residents to transit stops, benefiting the residents along the corridor, as discussed in Chapter 2, (Environmental Justice).

All intersections would operate at LOS D or better; therefore, no project impacts under horizon year (2044) conditions would occur.

Avoidance and Minimization Measures

As part of construction, Caltrans would prepare and implement a traffic management plan (TMP) to avoid and minimize the potential impacts of the proposed project on temporary access and circulation caused by potential traffic delays during construction.

References

2017 California Regional Transportation Plan Guidelines for Metropolitan Planning Organizations,

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Nevada County Active Transportation Plan, http://www.nctc.ca.gov/documents/Projects/ATP/NevadaCountyATP_Final_190703_full_red.pdf, Nevada County Transportation Commission, July 2019

State Route 49 Transportation Concept Report, <http://www.dot.ca.gov/dist3/departments/planning/tcr/tcr49.pdf> Caltrans District 3, October 2017

2.2.7. 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

A Visual Impact Assessment was prepared to provide information regarding the effects of the project to the visual setting now and in the future so that final transportation decisions will be made in the public interest. The report is intended to clearly describe the relevant existing conditions and the potential impacts of the project.

State Route 49 runs through Nevada County and is a two-lane conventional highway on its existing alignment. This rural portion of SR 49 serves local residents, commercial, tourist and recreational traffic through trips between Auburn and Grass Valley. It also is a transition section between a 0.5 mile four-lane section of SR 49 and the freeway section of SR 49 which runs through Grass Valley and Nevada City.

The visual settings throughout the project area are a mix of residential and small commercial uses surrounded by dense vegetation consisting of pines trees, manzanita shrubs and other miscellaneous vegetation. The view from the highway within the project limits from the traveler's perspective includes rolling sierra foothills, deep gullies/ravines that are adjacent to residential areas, a church, a fire station and small businesses. The character along this highway is a gentle rolling roadway with various cut and fill slopes. The visual quality of the area is quite scenic in some areas, especially where there is little development.

Views of the surrounding land are screened by roadside vegetation, topography and off-site vegetation. These views give the highway a rural character. There are existing road cut and fill slopes of varying heights visible adjacent to the highway. These slopes are covered with some native and nonnative vegetation consisting of pine trees and manzanita shrubs. This section of highway is a rolling , two-lane roadway with narrow shoulders with several long guardrail sections.

Environmental Consequences

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

The widening of the roadway and increased cut and fill slopes with the addition of a retaining wall and any removal of trees and vegetation will have a low to moderate visual effect on the

scenic resources. After the erosion control measures are in place, and with the replanting of trees and vegetation, the impact should begin to lessen and the project will not degrade the existing visual character, quality of the site, its surrounding community and remain consistent with the visual character and quality of the existing roadway corridor.

Retaining walls will have a low to moderate impact on the scenic quality of the project location. The ground disturbance from the removal of trees and the existing vegetation removal required to facilitate the upgrades will be kept to the minimum. As such, the project will have little effect on scenic vistas.

The most noticeable aspects of the completed project will be any loss of existing vegetation, such as the mature pine trees and manzanita shrubs. The large cut and fill slopes will have erosion control measure applied that will eventually grow to a natural state. With appropriate replanting around the cleared zones, the vegetated character of the roadway would be re-established.

Avoidance and Minimization Measures

Side Slope Standards:

Slopes will be designed as flat as is reasonable. For new construction, widening, or where slopes are otherwise being modified the embankment cut and fill slopes will be 4:1 or flatter. Flat, gentle, and smooth slopes are more easily revegetated, which helps visually integrate the transportation improvement within its surrounding environment. Contact the District Landscape Architect when preparing a contour grading plan.

Contour Grading and Slope Rounding:

Contour grading, slope rounding and topsoil replacement are important factors in roadside replacement or in roadside design to help make highway improvements compatible with the surrounding environment while complying with National Pollutant Discharge Elimination System permits (NPDES). Smooth, flowing contours that tie into the existing adjacent roadside and landforms are visually appealing and conducive to safe vehicle recovery, reduce the potential for erosion and stormwater runoff, and reduce roadside maintenance activities while contributing to the long-term success of revegetation planting.

Contour grading plans are to be prepared to facilitate anticipated roadside treatments and future maintenance activities. The tops and ends of all cut slopes will be rounded. Rock cut slopes will be irregular where possible to provide a natural appearance and the tops and ends will be rounded. All slope designs will include consideration of an application of local or imported topsoil and duff to promote the growth of vegetation, improve stormwater pollutant filtration and control erosion. Contour grading that preserves existing natural features and enhancing existing

vegetation that will be integrated into the overall composition. The calculation of the final grade for a project must consider the reapplication of topsoil and duff.

- Local topsoil and duff material within the grading limits will be identified on the plans, removed or excavated, stockpiled, and reapplied. This is to be performed on all projects that include grading or earthwork unless the materials are determined to be unsuitable.
- The Resident Engineer will coordinate the development of contour grading plans including, removal, stockpiling, of materials and the application of topsoil and duff with the District Landscape Architect.
- Replanting must reflect adjacent communities and natural surroundings; buffer/screen objectionable or distracting views of the highway facility for homes, schools, parks, etc.; soften visual impacts of large structures or graded slopes; frame or enhance good views.
- Aesthetic treatments on any retaining wall or sound walls that would help the structural element blend into the environment will be considered.
- Areas that would require ground disturbance by removing vegetation shall be restored and rectified respectively before completion of the construction project. The trees and vegetation shall be protected, where feasible. Vegetation removal shall be limited to the extent necessary to construct the project.
- Any vegetation that is removed would need to be replaced with appropriate vegetation that is indigenous to the area.
- Any work that requires vegetation removal near the stream channel will be replaced with appropriate vegetation that is indigenous to the area.
- All disturbed areas including access roads shall be re-graded to their pre-construction profiles and contours.
- Where there may be mature trees and vegetation, measures will be taken to preserve them.
- If the project requires equipment/staging areas, then Caltrans' Special Provision Section 5.1 applies which indicates that the contractor would be responsible for securing locations for staging and storage. At the end of construction, all areas used for staging, access, or other construction activities shall be repaired under Section 5-1.36 "Property and Facility Preservation.

References

Caltrans' Standard Environmental Reference - Environmental Handbook, Volume 1, Chapter 27, Visual and Aesthetics Review

Caltrans' Project Development Procedures Manual (PDPM) - Chapter 29, Landscape Architecture, Section 1 and Section 2

2.2.8. 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 (CHL). Procedures for compliance with PRC Section 5024 are outlined in a Memorandum of Understanding (MOU) 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 would satisfy the requirements of PRC Section 5024.

The studies for this undertaking were carried out in a manner consistent with caltrans' regulatory responsibilities under section 106 of the national historic preservation act (36 cfr part 800) and pursuant to the january 2014 first amended programmatic agreement among the federal highway administration, the advisory council on historic preservation, the california state historic preservation officer, and the california department of transportation regarding compliance with section 106 of the national historic preservation act (section 106 pa), as well as under public resources code 5024 and pursuant to the january 2015 memorandum of understanding between the california department of transportation and the california state historic preservation office [shpo] regarding compliance with public resources code section 5024 and governor's executive order w-26-92, addended 2019 (5024 mou) as applicable. in addition, the project is subject to state historic preservation laws and regulations set forth in the california environmental quality act (prc§21000 et seq.).

Affected Environment

In accordance with Section 106 PA Stipulation VIII.A, the Area of Potential Effects (APE) for the project was established in consultation with Erick Wulf, PQS PI Prehistoric Archaeology, Lisa Bright, PI-Historical Archaeology; Chris Kuzak, Principal Architectural Historian and Samuel Vandell, Project Manager, in May 2020. The APE includes all areas of possible (direct and indirect) impacts. The Archaeological APE is the Area of Direct Impact (ADI) for the project and the Architectural APE denotes areas of any potential indirect affects to structures. Two exceptions to this were the Bear River Sawmill/Bullion Gold Mine (CA-NEV-2273H) and Berriman Ranch (CA-NEV-1710H)/Prehistoric Site (CA-NEV- 1709), where the APE was established around the entire cultural resource per instructions from the Office of Historic Preservation. At these two locations the APE encompasses the entire site and an ADI was established to denote the area of direct impact. At these two sites, only the ADI and

immediately adjacent area was surveyed for cultural resources, the remainder of the site outside the ADI was not included in the archaeological survey since these areas were large and outside any areas of potential effects for the project. In addition, encroachment permits could not be obtained from the landowners to access areas outside the ADI. The ADI includes all areas of ground disturbance, vegetation removal road widening, new access roads, retaining walls, and drainage/culverts modifications along SR 49 between PM 11.1 and 13.3 in Nevada County. The vertical APE for the most project elements is two feet. For utility installation and/or relocation, drainage installation, and some cut banks excavation may occur as much as 15 feet deep.

Cultural Resources Identified within the APE

Analysis of the Cultural Resources for the proposed project were reported on in the following documents:

- Historic Property Survey Report (HPSR) prepared for Erick Wulf, Professionally Qualified Staff (PQS): Principal Investigator (PI) Prehistoric Archaeology, Task Order, prepared by JRP Historical Consulting, LLC (JRP) and Pacific Legacy, Inc. (PLI) and preliminarily dated September 2020
- Multi-Component Evaluation Report [MCER], Nevada 49 Widening Project, Grass Valley, Nevada County, California 03-NEV 49, PM 11.10/13.30, EA03-4E1700, E-FIS 0315000064-Phase 2, Contract 03A2679, Task Order 1 prepared by JRP Historical Consulting, LLC (JRP) and Pacific Legacy, Inc. (PLI) and preliminarily dated September 2020.
- Archaeological Survey Report [ASR] for the Proposed Roadway Upgrade Project on State Route 49 from South of the McKnight Interchange to La Barr Meadows Road, Nevada County, California prepared by Erick Wulf, PQS: PI Prehistoric Archaeology, preliminarily dated September 2020.
- A Finding of Effects would be submitted to the Office of Historic Preservation and Caltrans with a finding of No Adverse Effect without Standard Conditions - Environmentally Sensitive Area.

Methods used to support these studies for the analysis included record searches, field surveys including Phase 1 pedestrian surveys, Extended Phase 1 and Phase 2 testing, and Native American consultation with the United Auburn Indian Community, and local Historical Societies.

The project APE was subject to pedestrian archaeological surveys with two to four archaeologists from June 2016 through 2018, results of which were documented in the ASR. Archaeological surveys were conducted using transects of five to 20-meter width. Transects sometimes deviated from parallel running courses due to impenetrable brush and/or trees, slope steepness and to check areas of better ground visibility. The ground surface was closely

examined for evidence of cultural resources. Soil visibility varied considerable throughout the project from 100 percent in areas of no vegetation to zero percent in areas of heavy vegetation. In areas where ground visibility was obscured, 50 cm scrapes where conducted every 20 meters in order to assess the likelihood of cultural resources. Where vegetation density was such that pedestrian travel was neither prudent nor feasible, trowel scrapes were made at regular intervals along the borders of such vegetation. Also, in walking transects careful examination was made of all naturally and artificially disturbed areas such as rodent burrows and cut banks.

Research was conducted by Pacific Legacy and JRP at various phases of this project for the MCER. The inventory and evaluation for this project included research for developing a general historic context relative to the project location, as well as resource-specific research for the built environment properties within the APE to confirm dates of construction, review their land- use histories, establish each property's physical history, and properly place the properties into their appropriate historical contexts. Research was conducted at the Nevada County Historical Society, Nevada City; Nevada County Recorder's Office, Nevada County Assessor's Office; Nevada County Library, Nevada City; Shields Library, University of California – Davis; California State Library, Sacramento; online databases; and in JRP's in-house library. In addition, JRP examined standard sources of information that identify known and potential historic resources to determine whether any buildings, structures, objects, districts, or sites had been previously recorded or evaluated in or near the APE. This included the California Historical Landmarks and Points of Interest publications and updates, NRHP, CRHR, as well as the results of a California Historical Resources Information System records search through the North Central California Information Center (NCIC File No. NEV-16-40 October 15, 2016) made at the request of Erick Wulf of Caltrans (U.S. Department of the Interior n.d.; California Department of Parks and Recreation 1976 March; California Office of Historic Preservation 1996; California Office of Historic Preservation 1992 May).

The NCIC identified one historic resource previously recorded within the APE, the Berriman Ranch (P-29-2730). Two built environment properties within the APE are included in the OHP Historic Property Data File and have been determined not eligible for listing in the NRHP or CRHR. These two previously evaluated properties include the Mountain Air Mobile Home Estates, located at 13960 Golden Star Road, and 14464 SR 49, a 1955 single family residence – both recorded in 2005 (California Office of Historic Preservation 2005; California Office of Historic Preservation 2020). Chris Kuzak, Caltrans PQS Principal Architectural Historian, confirmed that these properties did not require further investigation.

Caltrans also provided the authors with four reports prepared for Caltrans that were undertaken in the project area but not on-file with the NCIC. Eight properties in the APE were previously recorded on Caltrans Architectural Inventory/Evaluation Forms as part of a 1993 Historic Architectural Survey Report (HASR). Research did not locate any SHPO concurrence for that

report. That study concluded that all the properties along the project alignments were post 1945 structures and did not appear eligible for the NRHP (Parks 1993). For purposes of this, MCER, two of these properties were exempted from recordation under the Section 106 PA and the other six properties were recorded and evaluated. The Berriman Ranch site (P-29-2730) was recorded as part of the 1993 HASR and was also recorded on a California Department of Parks and Recreation (DPR) Archaeological Site Record as part of a Historic Study Report/Historic Resource Evaluation Report in 1994. The Ranch was recorded a third time in 2006 on a DPR Archaeological Site Record, as part of an Archaeological Inventory Survey in 2006.

Caltrans' *Historical Context and Methodology for Evaluating Trails, Roads, and Highways in California* was consulted for further guidance. The state legislature designated SR 49, the Golden Chain Highway, a heritage corridor in 1974. This designation does not have status under NRHP Section 106 or CEQA. The route connects historical locations and the surrounding land is managed for aesthetics. The roadway itself has undergone regular maintenance and various realignments. Caltrans evaluated the roadway for NRHP eligibility in 2001 and found it not eligible.

JRP identified potential local interested parties for this project and sent notification letters on April 26, 2018. Recipients of the letter were the Nevada County Historical Society, Grass Valley Museum and St. Joseph's Cultural Center, Nevada County Community Madelyn Helling Branch and Grass Valley Branch libraries, Nevada County Planning Department, and Grass Valley Historical Commission. JRP followed up with an e-mail on May 18, 2018 to these organizations. City of Grass Valley Planner, Lance Lowe, responded that portions of the project in Grass Valley should be checked against the City's Historical Resources Survey of the 1872 Townsite conducted in 2009. Mr. Lowe apparently transposed two separate Caltrans projects, as the area he referenced was actually associated with SR 174. No portion of the current study is within the City of Grass Valley's Historical Resources Survey of the 1872 Townsite.

The general approach to the archaeological field investigations was defined by the Phase II proposal (Ballard et al. 2017) prepared for the project under previous authorization from Caltrans (Agreement No. 03A2156, Task Order 56). The following provides a summation of the specific methodologies employed during the execution of fieldwork for this project at the following sites:

- P-29-2730/CA-NEV-1710/H (Berriman Ranch)
- P-29-4753/CA-NEV-2271H (10037 Cornette Way)
- P-29-4754/CA-NEV-2272H (Great Eastern Mine)
- P-29-4655/CA-NEV-2273H (Bear River Sawmill/Bullion Gold Mine)

Investigation of each site included an intensive pedestrian survey of the site within and adjacent to the site boundaries as defined by Caltrans. Where possible, transects were spaced five

meters apart. Due to dense vegetation, this was frequently not possible. The survey crew instead walked meandering transects through breaks in the vegetation where the ground surface was visible.

Subsequent to the pedestrian survey, a metal detector survey of the historic-era sites was conducted. A White's Model DXF metal detector with a deep cycle-coil was used. Due to the large areas involved and dense vegetation, complete survey coverage with a metal detector was not possible. Consequently, the survey was more intuitive, focused around identifiable features and open areas.

Archaeological features were photo-documented and drawn as necessary to highlight particular attributes. Individual features were given letter designations to avoid confusion with the feature number designations given to individual sites by Caltrans.

Shovel test pits (STPs) were excavated at P-29-2730, -4753, and -4754. The STPs were semiformal 50 x 50 cm units, excavated in 20 cm levels. STPs were documented on standardized forms. For the most part, material recovered from the STPs was modern or of indeterminate age. This material was not collected; it was returned to the unit when it was backfilled.

The testing plan called for using a mechanical auger to explore for any possible extension of "Site 7" (a prehistoric archaeological component) within the archaeological APE at Berriman Ranch (P-29-2730). This work was to include a single transect of auger holes spaced 20 meters apart within the proposed cut/fill line. This work was completed with a 12-inch diameter power auger mounted on a CAT 239D compact track loader. The power auger was also used at the Bear River Sawmill/Bullion Gold Mine (P-29-4755) to determine if there was any evidence of a previously recorded prehistoric component within the ADI. Soil excavated with the power auger at both sites was deposited on plywood sheeting and screened through ¼ inch mesh screen to look for cultural materials.

Pacific Legacy, Inc. (PLI) prepared portions of this Multi-Component Resources Evaluation Report (MCER) related to archaeological resources within the APE. JRP Historical Consulting, LLC (JRP) prepared portions of the MCER related to the built environment, under sub-contract with PLI. This MCER identifies and evaluates historic-period properties (i.e., 45 years or older for built environment resources and 50 years or older for archaeological resources) in the APE for National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) eligibility. In total, eighteen properties were evaluated.

This MCER concludes that none of the resources evaluated for this report appear to meet the eligibility Criteria for listing on the NRHP, with the exception of the Berriman Ranch and the Bear River Lumber Mill/Mining Site where only the portion of the archaeological resource within the ADI could be evaluated. An assumption of eligibility for each of these sites as a whole was

granted by Caltrans Headquarters. Additionally, pursuant to Section 15064.5(a)(2)-(3) of the

Primary # /Trinomial	APN(s)	Community
P-29-2730/2745 CA-NEV-1710/H	22-140-53	Grass Valley
P-29-4753 CA-NEV-2271H	22-0702-19	Grass Valley
P-29-4754 CA-NEV-2272H	22-27-010 22-27-038 22-27-043 22-27-044	Grass Valley
P-29-4755 CA-NEV-2272H	22-14-043 22-16-006	Grass Valley
P-29-4756	n/a	Grass Valley
P-29-4758	23-070-21	Grass Valley
P-29-4759	23-070-38	Grass Valley
P-29-4760	23-070-68	Grass Valley
P-29-4761	22-160-36	Grass Valley
P-29-4762	22-140-41	Grass Valley
P-29-4763	22-150-26	Grass Valley
P-29-4764	22-150-10	Grass Valley
P-29-4765	22-140-08; 22-140-10; 22-140-11; 22-140-12; 22-140-22; 22-140-25	Grass Valley
P-29-5051	23-070-18	Grass Valley
P-29-5052	23-070-46	Grass Valley
P-29-5053	22-250-28	Grass Valley
P-29-5054	22-331-27; 22-331-34	Grass Valley
P-29-5055	22-190-18	Grass Valley

California Environmental Quality Act (CEQA), using Criteria outlined in Section 5024.1 of the California Public Resources Code, including the CRHR, none of the resources is a historical resource for the purposes of CEQA

Table 2-21. Historic-Period Properties Formally Evaluated in the MCER

Environmental Consequences

No-Build Alternative

Under the No-Build Alternative, the project would not be constructed and there would be no impacts on Cultural Resources.

Build Alternatives

Caltrans is currently consulting with SHPO regarding project effects.

Properties eligible for protection under the Department of Transportation Act of 1966, Section 4(f) include the Berriman Ranch and Bear River Lumbermill/Bullion Gold Mine. The proposed project would not result in a “use” of those historic sites as defined by Section 4(f).

The following describes project related impacts to the two assumed eligible sites in terms of the Criteria of Adverse Effects.

Berriman Ranch Site (P-29-2730/2745)

This resource has been assumed eligible for the NRHP for the purposes of this project only under Criterion d. Project activities within the ADI of the Berriman ranch site are limited to extension of the existing Taylorsville Road through to Crestview Drive to create a frontage road along SR 49. The new portion of Taylorsville Road will be constructed with two 11-foot lanes with four-foot shoulders. The maximum depth of excavation is anticipated at two feet. The portion of the site that will be impacted contains no physical features or artifacts that contribute to its historic significance. Consequently, the project would not result in physical destruction or

damage as defined under 36 CFR 800.5(a)(2)(i). Portions of the site outside the ADI will be protected by the establishment of an Environmentally Sensitive Area; therefore, the finding for the site is No Adverse Effect without Standard Conditions.

Bear River Lumbermill/Bullion Gold Mine (P-29-2755)

This resource has been assumed eligible for the NRHP for the purposes of this project only under Criterion d. Project activities within the ADI of the Bear River Lumbermill/Bullion Gold Mine site include an additional 12-foot wide lane with ten-foot shoulders added to SR 49. This work will involve additional cut on the existing cut slope which is a maximum height of 15 feet.

At least a quarter of the work within the Bear River Lumbermill/Bullion Gold Mine site will require the import of fill material. Excavations into the ground for road subbase will be a maximum of five feet deep. Additionally, a new connector road is proposed between SR 49 and La Barr Meadows Road. The road will have 12-foot lanes with ten-foot shoulders. Construction of most of this road will require the import of fill material; however, a few locations will require cut up to five feet deep for road subbase. La Barr Meadows road sits approximately 15 feet higher than SR 49, and the area in between has deep gullies that will require fill material.

The portion of the site that will be impacted by the proposed work contains no physical features or artifacts that contribute to its historic significance. Consequently, the project would not result in physical destruction or damage as defined under 36 CFR 800.5(a)(2)(i). Portions of the site outside the ADI will be protected by the establishment of an Environmentally Sensitive Area, therefore the finding for the site is considered a No Adverse Effect without Standard Conditions.

In summary, both of these resources are assumed eligible under PA Stipulation VIII.C.4. Based on the evaluations conducted at both the Berriman Ranch Site (P-29-2730/2745) and the Bear River Lumbermill and Bullion Gold Mine (P-29-4755), the project effects to these site deposits within the ADI will not alter the characteristics that might make the sites eligible for the NRHP (Baxter 2020). Pursuant to 36 CFR 800.5 (c) and 106 PA Stipulation X.B.2, the undertaking as a whole will not alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. The portions outside the ADI will be protected by the establishment of an Environmentally Sensitive Area (ESA) and Archaeological Monitoring Areas (AMA) discussed below.

The portions of these resources that were not evaluated will be avoided from project activities and therefore will not be adversely affected by the proposed project. Because project effects to the sites deposits within the ADI will not alter the characteristics that might make the site eligible for the NRHA and the remainder of the sites will be protected by establishment of ESAs, the impacts to this site do not meet the Criteria of Adverse Effect. Application of the Criteria of

Adverse Effect to sites P-29-2730/2745 and P-23-4755, thus, indicates that a finding of **No Adverse Effect** without Standard Conditions is appropriate for the undertaking as a whole, in accordance with 36 CRF 800.5 (c) and Stipulation X.B.2.a of the 106 PA.

Avoidance and Minimization Measures

Although the project would affect a small portion of the Berriman Ranch and Bear River Lumbermill/Bullion Gold Mine, the portions of the sites within the ADI for the proposed project do not retain sufficient integrity to convey the significance of the resources and would not diminish the ability of those resources to convey their importance for inclusion on the NRHP/CHL. Pending SHPO concurrence with the Finding of No Adverse Effect without Standard Conditions ESA, no avoidance or minimization measures are required.

Initially upon receiving the project, Caltrans Cultural Resource personnel identified three previously recorded cultural resources within the original project study area. Caltrans Cultural Resource Personnel worked with Caltrans Design Engineers to avoid three cultural resources that were originally being impacted by the project. Through redesigning of specific elements of the project, the three cultural resources were avoided entirely and were subsequently not studied as part of these reports since they were taken out of the project study area completely.

References

Archaeological Survey Report, Caltrans, September 2020

Finding of No Adverse Effect, Caltrans, September 2020

Historic Property Survey Report, Pacific Legacy, Inc., September 2020

Multi-Component Evaluation Report, Pacific Legacy, Inc., September 2020

2.3. PHYSICAL ENVIRONMENT

2.3.1. 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 source¹ unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES)

¹ A point source is any discrete conveyance such as a pipe or a man-made ditch.

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 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 effluent² 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.

² The U.S. EPA defines “effluent” as “wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall.”

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.

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

Water Quality Report – July 2018 and updated October 2020

The primary purpose of the Water Quality Assessment Report (WQAR) is to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), and, to the extent possible, for the National Pollutant Discharge Elimination System (NPDES) permitting and to provide information for inclusion into the Environmental Document.

This technical study includes a discussion of the proposed project, the general environmental setting of the project area, and the regulatory framework with respect to water quality. It also provides data on surface water and groundwater resources within the project area and their water quality health, describes water quality impairments and beneficial uses, identifies potential water quality impacts/benefits associated with the proposed project, and recommends avoidance and/or minimization measures for potentially adverse impacts.

Surface Water Hydrology

The following Calwater (State of California's Interagency Watershed Map) watershed parameters have been identified for the project area:

- Wolf Creek Watershed and Rattlesnake Creek-Wolf Creek Subwatershed (HUC 180201260202);
- Bear River Hydrologic Unit, Upper Bear Hydrologic Area, Wolf Creek Hydrologic Subarea (HSA 516.32);
- Wolf Creek is the is nearest major receiving water to the project.

Local Soils and Erosion Potential

A majority of the soils on the site are Musick Sandy Loam with 15 to 50 percent slopes, Hoda Sandy Loam with 15 to 50 percent slopes, Horseshoe Gravelly Loam with 9 to 15 percent slopes, Musick Sandy Loam with 5 to 15 percent slopes, and Musick-Rock Outcrop Complex with 5 to 50 percent slopes.

Given the project area's R factor value of 100, K factor value of 0.2 and LS factor value of 4.58, the project has been identified (preliminarily) as a Risk Level 3 (using the GIS Map method). The watershed erosion estimate is 91.60 tons/acre, which is considered a high sediment risk (Caltrans' SWDR – 2019).

Surface Water

Surface Water Quality Objectives/Standards and Beneficial Uses

Beneficial uses define the resources, services, and qualities of aquatic systems. Beneficial uses are critical to water quality management and the protection and enhancement of beneficial uses are the primary goals of water quality planning (per the Water Quality Control Plan [Basin Plan] for the Central Regional Water Quality Control Board). Using the California Regional Water Quality Control Board (Central Valley Region) Basin Plan, no specific beneficial uses were identified corresponding to HSA 516.32. However, the Central Valley Regional Water Quality Control Board has delineated region-wide and waterbody specific beneficial uses and has set numerical "water quality objectives" for several substances and parameters in numerous surface waters in its region. The specific beneficial uses for inland streams include the following: municipal and domestic supply (MUN), agricultural supply (AGR), commercial and sport fishing (COMM), freshwater replenishment (FRESH), industrial process supply (PRO), groundwater recharge (GWR), preservation of rare and endangered species (RARE), water contact recreation (REC1), noncontact water recreation (REC2), wildlife habitat (WILD), cold freshwater habitat (COLD), warm freshwater habitat (WARM), fish migration (MIGR), and fish spawning (SPWN).

Water quality objectives (mentioned above) are numerical or narrative and define the upper concentration or other limit(s) that the Regional Board considers protective of beneficial uses, public health and welfare, and to maintain or enhance water quality for all "waters of the State", "waters of the United States", surface waters (including wetlands), and ground water. And while no specific water quality objectives were listed for the receiving water identified (Wolf Creek – Nevada County), all inland surface waters within the Sacramento and San Joaquin River Basins have water quality objectives that are standard and include the following: bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, mercury, methylmercury, oil and grease, pH, pesticides, radioactivity, salinity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity.

From a larger regional perspective, using the tributary rule, the Bear River (south of the project) is associated with the following Beneficial Uses: AGR, COLD, OLD, MIGR, MUN, POW, REC1, REC2, SPWN, WARM, WILD (Caltrans Water Quality Planning Tool - 2021). Corresponding water quality objectives (for the Bear River) are extensive, and while not listed in this document, can be found in the latest Central Valley Regional Water Quality Control Board Basin Plan.

Regional Surface Water Quality

Wolf Creek's watershed area is approximately 78 miles, which consists almost entirely of the lower montane zone where the incidence of snowfall precipitation is comparatively low. The elevation range is between 3,000 feet at the headwaters to about 1,200 feet at its confluence with the Bear River. The river course from the source to its confluence is about 25 miles and the flow is in the north south direction, which is helpful in the development of productive and diverse ecosystems. Wolf Creek, along with its tributaries, forms the major tributary of the Bear River. It is part of the upper region of the Bear River watershed. Bear River drains into the Feather River, which joins the Sacramento River, which finally debouches into San Francisco Bay.

The project resides in a High Risk Receiving Watershed. High Receiving Water Risk Watersheds are Hydrologic Unit Code (HUC) Level 12 watersheds that drain to waterbodies that are either 1) 303(d) listed as being impaired for sediment/siltation, 2) have a US Environmental Protection Agency-approved, sediment-related Total Maximum Daily Load (TMDL), or 3) have the existing beneficial uses of SPAWN, MIG, and COLD according to the most recent applicable Regional Board Basin Plan.

List of Impaired Waters

Wolf Creek is listed as having a Total maximum Daily Loads (TMDL) impairment for indicator bacteria. This pollutant is not linked to Caltrans activities nor has Caltrans been identified as a stakeholder for it. Therefore, the Department has no obligation to implement permanent treatment BMPs for this (impairment causing) pollutant.

Wolf Creek confluences with the Bear River, south of the project, and is within a different planning watershed and associated with unique TMDLs. Generally, the Department does not “chase” connecting waterways outside of planning watersheds that a particular project may reside, so the TMDLs associated with this waterway (i.e. Bear River) are not a primary concern when considering treatment BMP implementation options.

Environmental Consequences

No-Build Alternative

The No-Build Alternative would not affect water quality or stormwater run-off in the project area because the proposed project would not be constructed.

Build Alternatives

Construction

Construction of the proposed project will involve land-disturbing activities, stockpiling, equipment use and storage, and potential spills that could result in temporary impacts on water resources within the project area. These activities have the potential to violate water quality standards and waste discharge requirements if sediment or contaminant laden runoff from disturbed soil areas (DSA), or a fuel or chemical spill, enters storm drains or other conveyances leading to receiving waters. Sources of sediment (generally) includes earthwork, excavation, embankment/fill construction, in-water work, uncovered or improperly covered stockpiles, unstabilized slopes, and construction equipment that is not properly cleaned or maintained.

The delivery, handling, and storage of construction materials and wastes (e.g. concrete debris), as well as the use of heavy construction equipment, could result in storm water contamination and adverse water quality impacts. Construction activities may involve the use of chemicals and operations involving industrial grade equipment that could result in an accidental spill of hazardous material (e.g. fuel and oil) during construction activities; these spills could potentially reach receiving waters or groundwater. Constituents in fuel, oil, and grease can be acutely toxic to aquatic organisms and bioaccumulate in the environment. Staging areas can also be a potential source of pollution due to the placement and storage of chemicals such as paints, solvents, cleaning agents and metals during construction. Impacts associated with metals in storm water includes toxicity to aquatic organisms, environmental bioaccumulation, and groundwater contamination.

Considering the potential environmental consequences (listed above), it is anticipated that potential effects could be significantly reduced or eliminated through the implementation of NPDES Permit requirements, Department storm water management procedures, compliance with the Construction General Permit requirements, regular site inspections and BMP effectiveness evaluations and the implementation of corrective measures.

Existing and Proposed Drainage

Existing drainage primarily consists of curbs, gutters, drainage inlets, cross culverts, paved and stabilized shoulders, vegetated cut and fill slopes, and stabilized and paved turnouts and private driveways. New drainage features will likely perpetuate existing flow patterns, but new systems will be designed to handle additional volumetric flows.

Treatment BMPs will be required, due to the anticipated new impervious area (e.g. greater than 1 acre). Treatment BMPs and LID features (for the project) will likely negate any adverse impacts, due to increased flow velocity and volume, caused by the inclusion of new impervious

area. Temporary BMPs should also aid in the avoidance of adverse impacts due to runoff and/or erosion to receiving waters during construction of the facility.

Suspended Particles (Turbidity)

During construction, potential short-term increases in turbidity could result from soil erosion and suspended solids being introduced into storm water conveyances and waterways. These discharges would (likely) violate water quality standards and waste discharge requirements and could potentially impact aquatic life. However, the implementation of a Storm Water Pollution Prevention Plan (SWPPP), LID measures, Department storm water guidance manuals, and the implementation of permanent erosion control should avoid adverse effects and minimize the potential for construction-related surface water pollution and ensure that water quality (for nearby receiving waters) would not be compromised.

Roadway Modifications

Construction activities involving large quantities of land disturbance could cause erosion and sedimentation and contribute to short-term increases of turbidity in receiving waters and downstream waterways. These activities typically involve vegetation removal and clearing, excavation and grading, which are primary causes of soil deposition into waterways and increases in turbidity. However, the implementation of a SWPPP, CGP compliance, regular project site inspections, BMP effectiveness evaluations and corrective measure implementation should help to avoid adverse impacts and potential deleterious effects.

Oil, Grease, and Chemical Pollutants

The use of industrial and heavy equipment and construction related materials can introduce pollutants and toxic chemicals onto the project site which has the potential to violate water quality standards and WDR's. In addition, some of these pollutants can accumulate in stream sediments and can be lethal to fish and aquatic species. To avoid adverse impacts, the contractor would be required to implement appropriate hazardous material management practices, spill prevention, and other good-housekeeping measures to reduce the potential for chemical spills or releases of contaminants, including any non-storm water discharge into drainage conveyances. It is anticipated that the project will follow the requirements set forth in the CGP which includes a well-defined field BMP strategy, outlined in the Caltrans approved SWPPP, to address waste containment, spill prevention, and non-storm water BMP contingencies. Overall, it is anticipated that proposed temporary BMPs will address and aid in the avoidance of adverse effects related to non-storm water management practices, vehicle and equipment maintenance, and spill prevention.

Avoidance, Minimization, and/or Mitigation Measures

It is anticipated that the project will be regulated under the CGP and will follow compliance requirements of Caltrans MS4 Permit and all applicable Department guidelines and mandated programmatic requirements. The CGP, in short, regulates storm water and non-storm water discharges associated with construction activities and requires the documentation and reporting of all findings related to the protection of water resources within the project area. In addition, the permits referenced, require that controls be implemented to reduce the discharge of pollutants in storm water to the maximum extent practicable to avoid adverse effects, including management practices, control techniques, system design and engineering methods, and other measures as appropriate.

Notwithstanding permit compliance, environmental commitments related to runoff and erosion control practices and BMPs would be implemented during construction operations to limit, reduce, and eliminate pollutants from impacting drainage systems and to diminish erosion within the project area.

Overall, the implementation of water quality measures (management measures and BMPs) are required to address project-related water quality impacts during construction, operation, and facility maintenance. Including previously outlined requirements, the following avoidance and minimization measures will ensure compliance with water quality objectives and mandated regulations.

Water Quality – Construction

The following recommended avoidance and minimization measures are anticipated to be implemented:

- Projects within Caltrans' ROW are required to adhere to the conditions of the Statewide National Pollutant Discharge Elimination System (NPDES) Permit (Permit) issued by the State Water Resources Control Board (Order No. 2012-0011-DWQ, NPDES Permit No. CAS000003). 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.
- 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) General Permit (CGP) is required for projects that disturb one or more acres of land surface.

- All applicable guidelines and requirements in the 2018 Caltrans Standard Specifications (CSS) Section 13 should be followed regarding water pollution control and general specifications for preventing, controlling, and abating water pollution in streams, waterways, water conveyance systems, and other bodies of water. Some of the pertinent specifications relating to the activities proposed are mentioned below.
 - Per CSS Section 13-3, if the land disturbance associated with the project is equal to or exceeds 1 acre, an approved SWPPP will be necessary which specifies the level of temporary pollution control measures for the project.
 - Per CSS Section 13-4, Job Site Management, the Contractor is required to control and prevent spills; address material waste and non-storm water management; and covers dewatering activities. In accordance with this section, the SWPPP (prepared by the Contractor) will describe mitigation measures that addresses effective handling, storage, usage, and disposal practices to control material pollution and manage waste and non-storm water at the job site before it encounters any storm drain, MS4 conveyance system, or receiving water.
 - For operations over water, CSS 13-4.03E(5) details specifics and requirements meant to address the use of material and equipment over waterways.
 - CSS Sections 13-9.02C and 13-9.02D is required to be followed and specifically address the handling of concrete waste during construction operations.
- Existing drainage facilities should be identified and protected by the application of appropriate Construction Site BMPs and all BMPs implemented must be routinely inspected for effectiveness and modified accordingly (by the Contractor).
- 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.
- Batch plants and/or rock crushing activities within Caltrans right-of-way (ROW) will require the preparation of an Air Space Lease Agreement prior to mobilization. The Lessee shall obtain an Industrial Storm Water General Permit Order 97-03-DWQ (General Industrial Permit) from the State Water Resource Control Board (SWRCB). The Lessee shall submit any amendments to the SWPPP, copies of any sampling/monitoring results, a copy of the annual report, and any reporting requirements covered by the General Industrial Permit. Batch plant or rock crushing activities outside of Caltrans ROW will require additional coordination.

2.3.2. 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 (RCRA). 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

An Initial Site Assessment was prepared 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.

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 would 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.

Naturally Occurring Asbestos

The California Air Resources Board (CARB) has identified naturally occurring asbestos (NOA) as a toxic air contaminant. NOA occurs in rocks and soil as a result of natural geological processes. Natural weathering and human activities, such as construction, may disturb NOA-bearing rock or soil and release mineral fibers into the air, which pose a greater potential for human exposure by inhalation. NOA-bearing rock/soil has been identified in Nevada County.

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 sign posts, metal beam guardrail wood posts, and lagging on retaining walls. The chemical preservatives used are hazardous and pose 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.

Cortese List

The Cortese List is a compilation of leaking underground storage tank sites identified by the State of California – State Water Resources Control Board; active, closed and inactive landfills identified by the Integrated Waste Management Board; and hazardous waste sites identified by the Department of Toxic Substances Control.

Structural Survey

Asbestos Containing Material (ACM) and Lead-Based Paint (LBP) structural surveys are required for any structure proposed to be demolished and/or disturbed.

Environmental Consequences

No-Build Alternative

The No-Build Alternative would not affect hazardous waste/materials because the proposed project would not be constructed.

Build Alternatives

Lead in Soil

Soil on the project site that is contaminated by aerially deposited lead (ADL) is not expected to be a hazardous waste. However, a preliminary Site Investigation (PSI) would be required during the design phase of the project resulting in three possible scenarios related to ADL:

- *Scenario 1:* Soil materials excavated from zero to three feet below ground surface (bgs) as a whole may be reused onsite and/or disposed outside the project limits without restrictions based on lead content.
- *Scenario 2:* Lead-contaminated soil excavated from zero to three foot below ground surface may be reused onsite only in Caltrans rights-of-way. Based on total lead concentration levels, the wastes would be covered with nonhazardous soil or asphalt/concrete cover measuring a minimum of one-foot thick and would be located at least five feet above the highest groundwater elevation.
- *Scenario 3:* Based on the Lead concentration, the excess generated material is a non-RCRA hazardous waste and would be transported and disposed of at a proper landfill.

The construction contractor would be required to implement Caltrans Standard Special Provisions (SSP):

- SSP 7-1.02K(6)(j)(ii), “Lead Compliance Plan,” which requires the submittal of a lead compliance plan that identifies specific California Occupational Safety and Health Administration (Cal/OSHA) requirements for working with lead include 8 CA Code of Regs § 1532.1

Thermoplastic/Paint Stripe/Pavement Markings

Residue from removal of yellow thermoplastic and yellow painted traffic stripe and pavement marking contains lead chromate in varying concentrations depending upon color, type and year of manufacture. Caltrans considers residue from the removal of this material to be a department-generated hazardous waste. The construction contractor would be required to implement the following Caltrans SSPs:

- SSP 36-4 Residue Containing Lead From Paint and Thermoplastic

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), the United States Geological Survey (USGS), and previous studies conducted by Caltrans. The evaluation does not indicate the presence of altered ultramafic bedrock, alluvium derived from ultramafic rock, or rock commonly associated with NOA.

Treated Wood Waste (TWW)

TWW can occur as posts along metal beam guard railings, three beam barriers, piles, or roadside signs. These wood products are typically treated with preserving chemicals that may be hazardous (carcinogenic) and include but are not limited to arsenic, chromium, copper, creosote, and pentachlorophenol. The California Department of Toxic Substances Control (DTSC) requires that TWW be disposed as a hazardous waste.

TWW may not be relinquished to the contractor and must be disposed of at an appropriate permitted disposal facility or be reused on the originating project in a manner that is consistent with the original intended use. Additionally, regulations specify the manner in which TWW must be stored while awaiting disposal.

Under current regulations, untested TWW may be disposed in either a Class I hazardous waste landfill, or a composite-lined portion of a solid waste landfill unit that meets all requirements for disposal of municipal solid waste and is regulated by waste discharge requirements issued for discharges of designated waste or TWW. The construction contractor would be required to implement SSP 14-11.14, “Treated Wood Waste,” which identifies specifications for handling, storing, transporting, and disposing of TWW.

Cortese List

The Cortese 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 and with compliance with CEQA. Both the Envirostor and the Geotracker databases confirm there are no Cortese Listed sites within the study area.

Structural Survey

Following the structural surveys, proper specifications for notification, handling and disposal would be necessary. If demolishing/disturbing structures, then demolition/renovation/rehabilitation notification/permit forms and attachments must be submitted to the Air Pollution Control District (APCD) or Air Quality Management District (AQMD) as required by the National Emissions Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR Part 61, Subpart M, and California Health and Safety Code section 39658(b)(1).

Avoidance and Minimization Measures

Caltrans' SSPs would be included in the construction contract to address the following issues:

- SSP 7-1.02K(6)(j)(ii), "Lead Compliance Plan," requires the submittal of a lead compliance plan that identifies specific Cal/OSHA requirements for working with lead.
- SSP 36-4 Residue Containing Lead From Paint and Thermoplastic
- SSP 14-11.14, "Treated Wood Waste," identifies specifications for handling, storing, transporting, and disposing of TWW.
- A health & safety work plan in accordance with DTSC and Cal/OSHA regulations would be prepared by the construction contractor before construction begins.
- Caltrans would conduct a site investigation for aerially deposited lead before construction begins. The ISA would be updated to include any findings and recommendations identified in the ADL site investigation and a project specific Lead Compliance Plan (LCP) for ADL would be prepared.
- If structures are acquired for the project, Caltrans would conduct a structural survey for asbestos containing materials or lead containing paint before construction begins. The ISA would be updated to include any findings and recommendations identified in the structural survey which may require special materials handling, worker health and safety training and/or abatement required for construction.

References

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, and the Resource Conservation and Recovery Act (RCRA) of 1976

Occupational Safety and Health Act (OSHA) Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection

July 1, 2016, ADL Agreement between Caltrans and the California Department of Toxic Substances Control

SER, Vol. 1, Chapter 10, “Hazardous Materials, Hazardous Waste, and Contamination. State

State Water Resource Control Board – GeoTracker, an online database that (1) provides access to statewide environmental data and (2) tracks regulatory data

Department of Toxic Substances Control’s EnviroStor, an online search and Geographic Information System (GIS) tool for identifying sites that have known or potential contamination as well as facilities permitted to treat, store, or dispose of hazardous waste.

ASTM E1527-13, Phase I Environmental Site Assessments Guidance

Cortese list – Government code subsection (f) of Section 65962.5.

2.3.3. 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 (NO₂), ozone (O₃), particulate matter (PM)—which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM₁₀) and particles of 2.5 micrometers and smaller (PM_{2.5}), Lead (Pb), and sulfur dioxide (SO₂). In addition, state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H₂S), 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 (NO₂), ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}), and in some areas (although not in California), sulfur dioxide (SO₂). California has nonattainment or maintenance areas for all of these transportation-related “criteria pollutants” except SO₂, 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 scope³ 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

An Air Quality Report (July 2020) was completed for the project. The primary purpose of the Air Quality Report (AQR) is to fulfill the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), and to provide information for inclusion into the Environmental Document.

This section summarizes existing air quality conditions near the proposed project area. It includes attainment statuses for criteria pollutants, describes local ambient concentrations of criteria pollutants for the past three years, and discusses Mobile Source Air Toxics (MSAT) which are toxic or hazardous air pollutants suspected of causing cancer and Greenhouse gas (GHG) emissions which are atmospheric gases that trap heat in the Earth's atmosphere. The closest monitoring station to the Project site is the Grass Valley-Litton Building Air Monitoring Station, which is located approximately 24 miles west of the Project location (**Figure 2-11**).

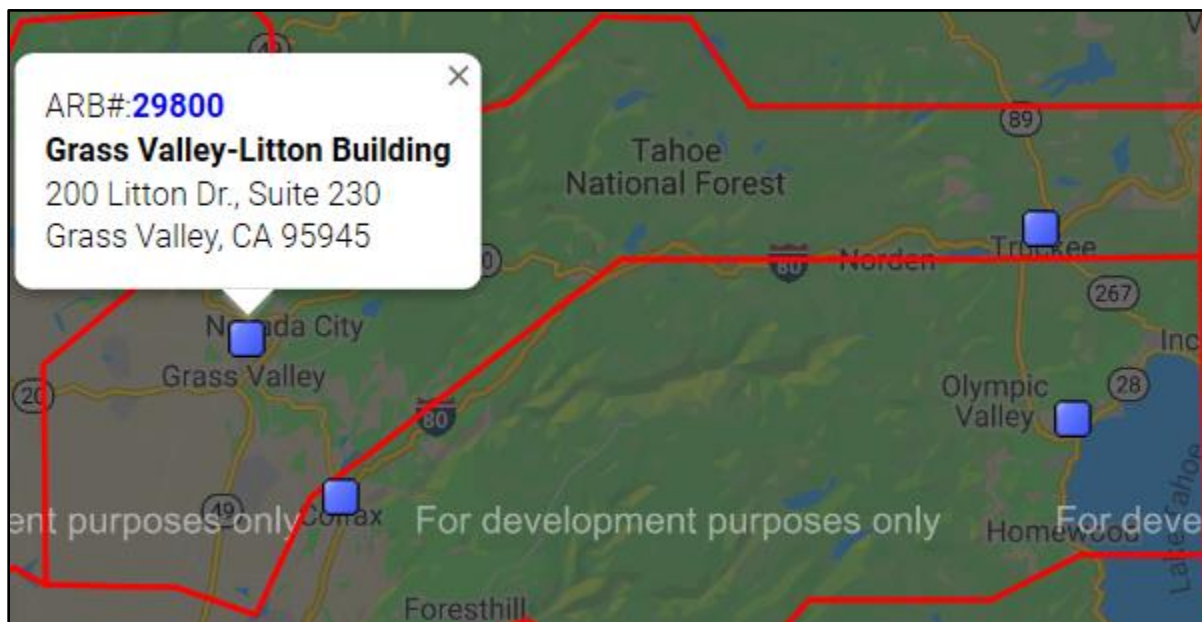


Figure 2-11. Map of Air Quality Monitoring Stations Located Near the Project

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 Grass Valley climatological station (GOO), maintained by City of Grass Valley in Nevada County, is located near the project site and is representative of meteorological conditions near the project. **Figure 2-12** shows a **wind rose**, (a graphic tool used by meteorologists to give a succinct view of how wind speed and direction are typically distributed at a particular location) **illustrating the predominant wind patterns** near the project. The prevailing wind direction over the county is westerly. However, the terrain of the area has a great influence on local winds, so that wide variability in wind direction can be expected. Afternoon winds are generally channeled up-canyon, while nighttime winds generally flow down-canyon. Winds are, in general, stronger in spring and summer and weaker in fall and winter. Periods of calm winds and clear skies in fall and winter often result in strong, ground based inversions forming in mountain valleys. These layers of very stable air restrict the dispersal of pollutants, trapping these pollutants near the ground, representing the worst conditions for local air pollution occurring in the county [North Sierra Air Quality Management District (NSAQMD) 2005].

Nevada County exhibits large variations in terrain and consequently exhibits large variations in climate, both of which affect air quality. The western portions of the county slope relatively gradually with deep river canyons running from southwest to northeast toward the crest of the Sierra Nevada range. East of the divide, the slope of the Sierra is steeper, but river canyons are relatively shallow. The warmest areas in Nevada County are found at the lower elevations along the county's west side, while the coldest average temperatures are found at the highest elevations (NSAQMD 2005).

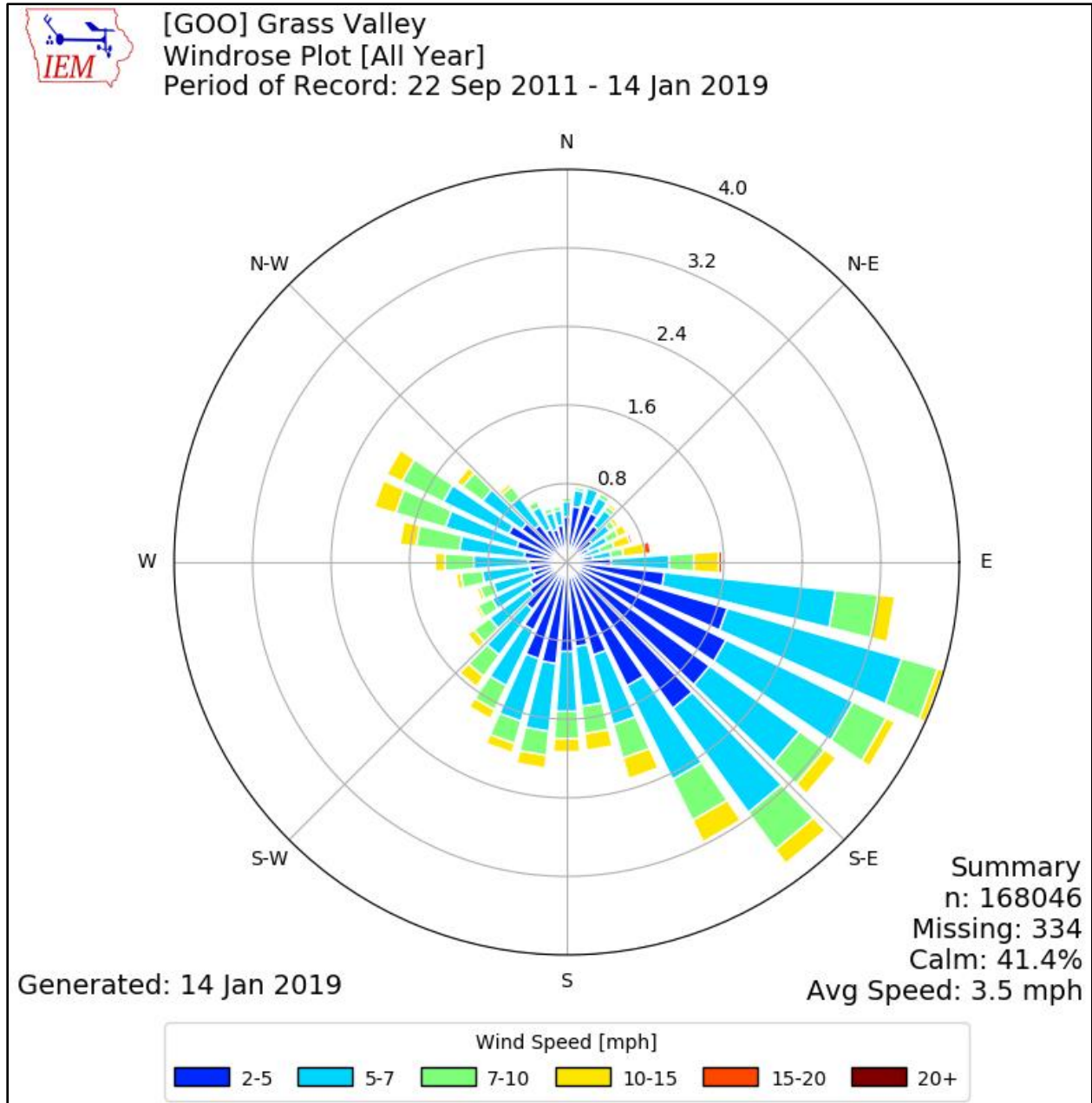


Figure 2-12. Predominant Wind Patterns Near the Project

(Source: https://mesonet.agron.iastate.edu/sites/windrose.phtml?station=GOO&network=CA_ASOS).

Regional airflow patterns influence air quality patterns by directing pollutants downwind of sources. Localized meteorological conditions, such as light winds and shallow vertical mixing, and topographical features, such as surrounding mountain ranges, create areas of high pollutant concentrations by hindering dispersal. An inversion layer is produced when a layer of warm air traps cooler air close to the ground. Such temperature inversions hamper dispersion by stratifying contaminated air near the ground.

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 2-22** lists the **state and federal attainment status** for all regulated pollutants in Western Nevada County.

Table 2-22. State and Federal Attainment Status

Pollutant	State Attainment Status	Federal Attainment Status
8-Hour Ozone (O ₃)	Nonattainment	Nonattainment (Moderate)
Respirable Particulate Matter (PM ₁₀)	Nonattainment	Unclassified
Fine Particulate Matter (PM _{2.5})	Unclassified	Unclassified/Attainment
Carbon Monoxide (CO)	Attainment	Unclassified/Attainment
Nitrogen Dioxide (NO ₂)	Attainment	Unclassified/Attainment
Sulfur Dioxide (SO ₂)	Attainment	Unclassified/Attainment
Lead (Pb)	Attainment	Unclassified/Attainment
Visibility-Reducing Particles	Unclassified	N/A
Sulfates	Attainment	N/A
Hydrogen Sulfide	Unclassified	N/A

As seen above, the project location is in attainment status for regulated pollutants for National and State Air Quality standards.

Table 2-23 lists **air quality trends** in data collected at the Grass Valley-Litton Building Air Monitoring Station for the past three years. O₃ and PM_{2.5} data were obtained from this station. PM₁₀ information was from the Mountain Counties Air Basin. The data in **Table 2-23** was compiled from the California Air Resources Board's iADAM: Air Quality Data Statistics and the Environmental Protection Agency's Monitor Values Report.

Table 2-23. Air Quality Concentrations for the Past 3 Years Measured at Grass Valley-Litton Building

Pollutant	Standard	2016	2017	2018
Highest 8-hr concentration (ppm): State	0.070 ppm	0.097	0.099	0.102
Highest 8-hr concentration (ppm): Federal	0.070 ppm	0.097	0.099	0.101
No. days exceeded: State		46	85	28
No. days exceeded: Federal		39	78	22
PM₁₀*				
Pollutant	Standard	2016	2017	2018
Highest 24-hr concentration (µg/m ³): State	50 µg/m ³	56.6	123.9	270.1
Highest 24-hr concentration (µg/m ³): Federal	150 µg/m ³	62.4	141.7	307.5
No. days exceeded: State		2	18	31
No. days exceeded: Federal		0	0	17
Annual average concentration (µg/m ³): State		12.2	**	**
Annual average concentration (µg/m ³): Federal		20	24.9	33.3
PM_{2.5}				
Pollutant	Standard	2016	2017	2018
Max 24-hr concentration (µg/m ³)	35 µg/m ³	11.7	68.1	142.8
No. days exceeded: Federal		0	3	12.1
Annual average concentration (µg/m ³) State		4.6	5.8	6.9
Annual average concentration (µg/m ³) Federal		4.6	4.9	6.2
Source: California Air Resources Board (http://www.arb.ca.gov/adam) and accessed 06/02/2020				
*PM ₁₀ data in the Mountain Counties Air Basin.				
**means there was insufficient data available to determine the value.				

The table above includes the list of ambient pollutant concentrations from the nearby monitoring location for three years 2016, 2017, and 2018, respectively.

Table 2-24 below displays the status of the U.S. EPA-approved **State Implementation Plans (SIPs)** that are relevant to the proposed project.

Table 2-24. Status of SIPs Relevant to the Project Area

Name/Description	Status
2018 Western Nevada County Planning Area Ozone Attainment Plan	Released (10/12/2018)
Rule 428-NSR Requirements for New and Modified Major Sources in Nonattainment Areas	Noticed (11/25/2019)
2018 Updates to the California State Implementation Plan	Adopted (10/25/2018)
2018 Reasonably Available Control Technology SIP for Western Nevada County	Submitted (6/7/2018)

Table 2-24 also provides U.S. EPA actions related to designations, which is the status of budget adequacy findings by the U.S. EPA on any submitted implementation plans.

MSAT Emissions

The US EPA regulates a list of air toxics (64 FR 38706). Toxic air pollutants or hazardous air pollutants (HAPs) are those that are known to cause or suspected of causing cancer or other serious health ailments. Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that US EPA regulate 188 air toxics, also known as hazardous air pollutants. In 2001, US EPA issued its first Mobile Source Air Toxics Rule, which identified 21 mobile source air toxic (MSAT) compounds as being hazardous air pollutants that required regulation. A subset of these MSAT compounds was identified as having the greatest influence on health. EPA issued the second MSAT Rule in 2007, which generally supported the findings of the first rule and provided additional recommendations of compounds having the greatest impact on health. The rule also identified several engine emission certification standards that must be implemented. US EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS).⁴

The 21 HAPs identified by US EPA as MSATs are 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 the incomplete combustion of fuels or as by-products. Metal air toxics result from engine wear or from impurities in oil or gasoline. US EPA has identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA).⁵ These are acrolein, benzene, 1,3-butadiene, diesel particulate matter (DPM) that includes diesel exhaust organic gases, formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the

⁴ Source: <http://www.epa.gov/ncea/iris/index.html>

⁵ Source: <http://www.epa.gov/ttn/atw/nata1999/>

priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

The US EPA is the lead federal agency responsible for administering the Clean Air Act and has certain responsibilities regarding the health effects of MSATs. In its 2001 rule (66 FR 17229), US EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline program, national low emission vehicle standards, Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements.⁶ The agency is preparing another rule under authority of Clean Air Act Section 202(l) that would address these issues and could make adjustments to the full 21 and the primary seven MSATs.⁷

FHWA's ongoing work in air toxics includes a research programs to better understand and quantify the contribution of mobile sources to air emissions, the establishment of policies for addressing mobile source emissions in environmental reports, and the assessment of scientific literature on health impacts associated with motor vehicle emissions. California's vehicle emission control and fuel standards are more stringent than federal standards, and are effective earlier. CARB found that DPM contributes over 70 percent of the known risk from air toxics and poses the greatest cancer risks among all identified air toxics. Diesel trucks contribute more than half of the total diesel combustion sources. In response, CARB adopted a Diesel Risk Reduction Plan with control measures to reduce the overall DPM emissions by about 85 percent from 2000 to 2020. Part of the plan included recently adopted regulation that requires operators of truck and bus fleets in California to retrofit or replace vehicles to meet US EPA NO_x and PM_{2.5} emission standards for 2010 model trucks (13 C.C.R. section 2025). Implementation of this regulation begins in 2014. By 2023, nearly all trucks and buses operating in California will need to meet 2010 model year engine emission standards.

Emissions of MSATs are anticipated to decrease substantially in future years. According to an FHWA analysis using EPA's MOVES2010b model, as shown in Figure 2-7, a combined reduction of 83 percent in the total emissions for the priority MSATs from 2010 to 2050 is projected. This would occur while vehicle-miles travelled (VMT) is assumed to increase by 102 percent. The combined State and Federal regulations are expected to result in greater emission reductions, more quickly, than the FHWA analysis indicates. Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors.

⁶ These programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 percent to 65 percent, and will reduce on-highway diesel PM emissions by 87 percent for FHWA projects between 2000 and 2020 even with a 64 percent increase in Vehicle Miles Traveled (VMT), as documented in the FHWA Memorandum: Interim Guidance on Air Toxics Analysis in NEPA Documents, February 3, 2006.

⁷ EPA is planning to propose new rule making that would include more stringent vehicle emissions standards (Tier 3 Motor Vehicle Emissions) and reduce the sulfur content of gasoline beginning in 2017.

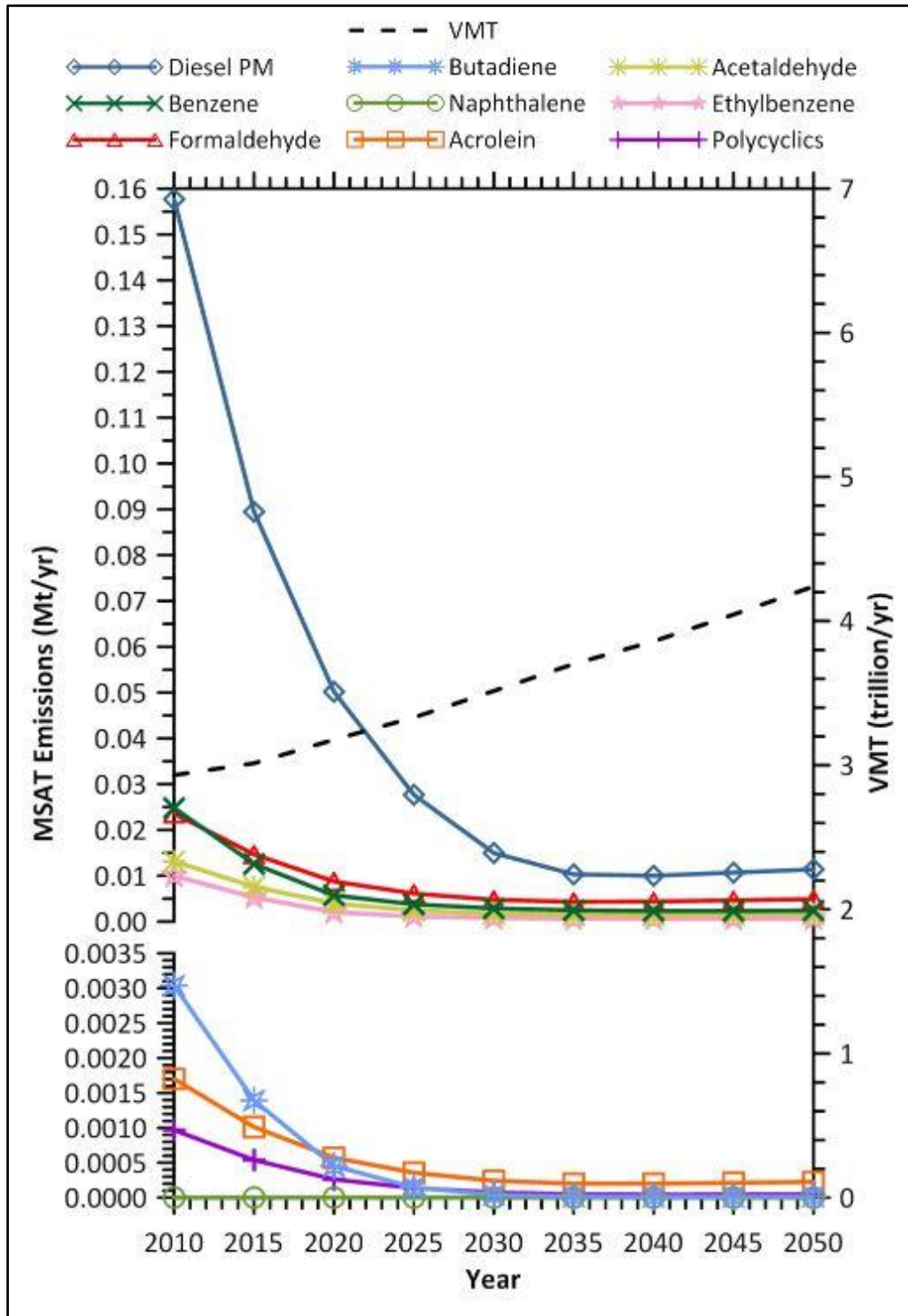


Figure 2-13. MSAT Emissions

Within the project area, MSAT is the primary pollutant that would be attributed to the transportation on SR-49.

Sensitive Receptors

Sensitive receptors include residential areas, schools, hospitals, other health care facilities, child/day care facilities, parks, and playgrounds. On the basis of research showing that 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 2-14** shows the locations of receptors relative to the proposed project site.

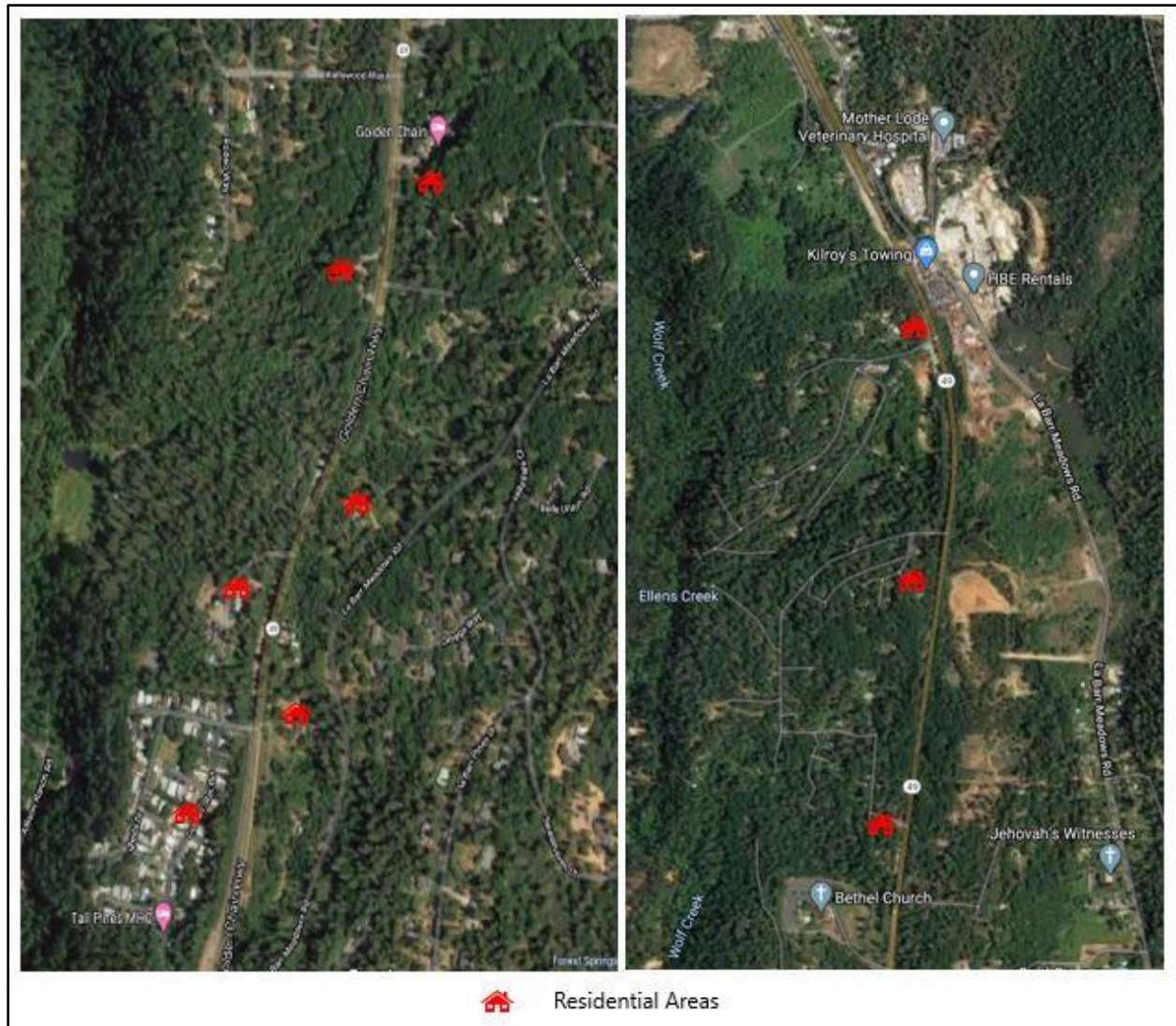


Figure 2-14. Receptors Near the Proposed Project

Environmental Consequences

No-Build Alternative

Under the No-Build Alternative, the project would not be built, and the existing roadway would be maintained. Particulate Matter (PM_{2.5} & PM₁₀) would continue to increase while ROG, CO, NO₂ would be reduced.

Build Alternatives

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).

A regionally significant project includes a 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. Throughout the interagency consultation, USEPA, FHWA, and NSAQMD concurred that the proposed project is not a regionally significant project.

Project Level Conformity

This project location is in the unclassified/attainment area for National CO, PM₁₀, and/or PM_{2.5}. The area does not cause or contribute to any new localized CO, PM_{2.5}, and/or PM₁₀ violations, or delay timely attainment of any NAAQS or any required interim emission reductions or other milestones during the timeframe of the transportation plan. Therefore, hot-spot analyses for CO, PM₁₀, and/or PM_{2.5} under 40 CFR 93.109 are not required.

The proposed project does not require a project-level PM and/or CO hot spot analysis, since it is in the unclassified/attainment area for National PM and CO Standards. Therefore, the interagency consultation process for the project-level PM and/or CO hot spot analysis does not apply.

NCTC completed an Interagency Consultation Review (ICR) in order to evaluate if it is a regionally significant project. The project obtained concurrence from the EPA, FHWA, NSAQMD, and Caltrans that the proposed project is not a regionally significant project on June 22, 2020, June 23, 2020, June 15, 2020, and June 23, 2020, respectively. The concurrence is included in Appendix D and a summary of the interagency consultation process for this project can be found in **Table 2-25** below.

Table 2-25. Summary of Interagency Consultation Process

Date	Format	Participants	Discussion Summary	Outcomes
6/11/2020	E-mail	NCTC	NCTC initiated an ICR.	Initiation of a review process
6/15/2020	E-mail	NSAQMD	The NSAQMD concurs that the project is not regionally significant and that it is exempt from an air quality conformity analysis by virtue of being predominantly a safety project.	Concurrence
6/22/2020	E-mail	EPA	EPA concurs that this project is not regionally significant and contains components that are exempt under 93.126 and others that are exempt under 93.127, therefore the project is exempt from a regional emissions analysis for conformity. As there are no project level analysis components for ozone (not CO or PM), hot spot project-level conformity analysis is not required.	Concurrence
6/23/2020	E-mail	FHWA	FHWA concurs this project is exempt from a regional emissions analysis for conformity. As there are no project level analysis components for ozone (not CO or PM), hot spot project-level conformity analysis is not required.	Concurrence
6/23/2020	E-mail	Caltrans	Caltrans concurs that the State Route 49 Corridor Improvement project (03-4E170) is not regionally significant. This project is exempt from a regional emissions analysis.	Concurrence

Construction (Short-term) Impacts

Construction activities will not last for more than five years at one general location, so construction-related emissions do not need to be included in regional and project-level conformity analysis [(40 CFR 93.123(c)(5)].

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, NO_x, ROG, directly emitted PM₁₀ and PM_{2.5}, 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-CET2018 (version 1.3). **Table 2-26** presents construction-related emissions for the proposed project.

Table 2-26. Construction Emissions for Roadways

Phases Emissions	PM ₁₀ (tons)	PM _{2.5} (tons)	CO (tons)	NO _x (tons)	ROGs (tons)	CO ₂ (tons)
Land Clearing/Grubbing	0.139	0.035	0.30	0.35	0.053	84
Roadway Excavation/Removal	0.344	0.236	2.74	3.08	0.435	642
Structural Excavation/Removal	0.124	0.021	0.08	0.16	0.026	42
Base/Subbase/Imported Borrow	0.339	0.231	2.82	2.91	0.412	593
Structure Concrete	0.051	0.050	0.49	0.85	0.158	185
Paving	0.117	0.114	0.65	1.63	0.213	304
Drainage/Environment/Landscaping	0.091	0.089	0.51	1.17	0.178	217
Traffic Signalization/Signage/Striping/Painting	0.061	0.060	0.61	1.18	0.131	415
Other Operation	0.000	0.000	0.00	0.00	0.000	0
Project Total (tons)	1.266	0.835	8.21	11.34	1.607	2,482

The emissions presented are based on the best information available at the time of calculations. The emissions represent construction emissions generated by construction equipment during the construction of the project.

Long-Term Effects (Operational Emissions)

Operational emissions take into account 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 2-27** below contains a summary of all long-term operational emissions associated with the proposed project.

Table 2-27. Summary of Comparative Emissions Analysis

Scenario/ Analysis Year	ROG (US tons/day)	CO* (US tons/day)	PM ₁₀ * (US tons/day)	PM _{2.5} * (US tons/day)	NO _x * (surrogate for NO ₂) (US tons/day)
Baseline (Existing Conditions), 2018	0.011	0.132	0.069	0.012	0.030
No-Build, 2024	0.008	0.073	0.072	0.012	0.017
Build Alternative, 2024	0.009	0.083	0.081	0.013	0.019
No-Build, 2044	0.003	0.035	0.078	0.013	0.009
Build Alternative, 2044	0.004	0.046	0.103	0.017	0.011

CO: carbon monoxide; PM: particulate matter; NO_x: oxides of nitrogen; NO₂: nitrogen dioxide

*Off-model adjustment factors were applied

Source: EMFAC2017

CO and NO_x emissions from the traffic operation during the opening (2024) and the design (2044) years would change between no-build and build alternatives. The emissions of CO and NO_x in the future build alternatives would be slightly higher than those in the future no-build alternative, while these emissions would be lower than those in the existing condition.

Table 2-28. Summary of Project-Level (Operational) Air Quality Analyses

Pollutant	Conformity	NEPA	CEQA
Ozone (O ₃)	O ₃ is a regional pollutant with indirect impacts and it is infeasible to model project-level impacts on O ₃ due to its photochemical nature. In isolated rural areas, document that project is in a regional conformity analysis showing that Interim or Emission Budget tests are met. Since the proposed project is not a regionally significant project hot-spot analysis for O ₃ is not required.	O ₃ is a regional pollutant with indirect impacts and it is infeasible to model project-level impacts on O ₃ due to its photochemical nature. A precursor emissions burden analysis can be performed using EMFAC or CT-EMFAC (for NO _x and VOC). Modeling Tools: EMFAC/CT-EMFAC	O ₃ is a regional pollutant with indirect impacts and it is infeasible to model project-level impacts on O ₃ due to its photochemical nature. A precursor emissions burden analysis can be performed using EMFAC or CT-EMFAC (for NO _x and VOC). Modeling Tools: EMFAC/CT-EMFAC
PM ₁₀	The project is within an unclassified area. No analysis regarding conformity is needed.	A comparative emissions analysis is needed, and the analysis relies on modeling exhaust emissions from EMFAC or CT-EMFAC and road dust emissions estimates. ARB's data source for calculating road dust emissions is recommended. Modeling Tools: EMFAC/CT-EMFAC,	Prepare a project-level comparative emissions analysis, including exhaust emissions estimates from EMFAC or CT-EMFAC and road dust emissions estimates. ARB's data source for calculating road dust emissions is recommended. Modeling Tools: EMFAC/CT-EMFAC,
PM _{2.5}	The project is within an unclassified/attainment area. No analysis regarding conformity is needed.	For PM _{2.5} direct vehicle emissions (exhaust, tire wear, and brake wear from on-road vehicles), follow the same requirements for PM ₁₀ . Non-direct vehicle emissions of PM _{2.5} (road dust) are typically considered as well (follow the same analysis approach for PM ₁₀). Modeling Tools: EMFAC/CT-EMFAC	For PM _{2.5} direct vehicle emissions (exhaust, tire wear, and brake wear from on-road vehicles), follow the same requirements for PM ₁₀ . Non-direct vehicle emissions of PM _{2.5} (road dust) are typically considered as well (follow the same analysis approach for PM ₁₀). Modeling Tools: EMFAC/CT-EMFAC
CO	The project is in an unclassified/attainment area for CO. No analysis regarding conformity is necessary.	The Caltrans/UC Davis 1997 CO Protocol (http://www.dot.ca.gov/hq/env/air/pages/coprot.htm) is commonly used for CO analyses. If the qualitative screening procedure indicates that a quantitative analysis is required, follow modeling instructions for using CALINE4 with EMFAC emissions factors. CT-EMFAC may also be used. Modeling Tools: CO Protocol, EMFAC/CT-EMFAC, CALINE4 (CL4)	The Caltrans/UC Davis 1997 CO Protocol (http://www.dot.ca.gov/hq/env/air/pages/coprot.htm) is commonly used for CO analyses. If the qualitative screening procedure indicates that a quantitative analysis is required, follow modeling instructions for using CALINE4 with EMFAC emissions factors. CT-EMFAC may also be used. Modeling Tools: CO Protocol, EMFAC/CT-EMFAC, CALINE4 (CL4)
NO ₂	The project is in an unclassified/attainment area for NO ₂ . No analysis regarding conformity is necessary.	CT-EMFAC provides NO _x (combination of NO and NO ₂) emissions estimates that can serve as a useful analysis surrogate for NO ₂ emissions analysis.	CT-EMFAC provides NO _x (combination of NO and NO ₂) emissions estimates that can serve as a useful analysis surrogate for NO ₂ emissions analysis.

Pollutant	Conformity	NEPA	CEQA
SO ₂	Not required. All of California is in attainment or unclassified. Include a qualitative statement saying that SO ₂ impacts are <i>de minimis</i> for on- and off-road vehicles (except cargo ships) because gasoline and diesel fuel is low-sulfur by ARB requirement. Cite FHWA conformity guidance that only 4/6 criteria pollutants (not SO ₂) are of concern for transportation sources: http://www.fhwa.dot.gov/environment/air_quality/conformity/guide/guide04.cfm .	SO ₂ is not of concern for transportation sources.	SO ₂ is not of concern for transportation sources.
Lead (Pb)	Not required.	Typically, not an air quality issue. However, ADL (Aerially Deposited Lead) needs to be addressed under Hazardous Waste section.	Typically, not an air quality issue. However, ADL (Aerially Deposited Lead) needs to be addressed under Hazardous Waste section.
GHG	Not required.	Not required.	The proposed project analyzes and documents quantitative GHG emissions associated with the operation of the project, using CT-EMFAC. Additionally, EO B-30-15 requires all projects to calculate construction GHG emissions. CAL-CET2018 is used to quantify the expected construction-related GHG emissions related to the proposed project.
MSATs	Not required.	The project will follow FHWA's "Updated Interim Guidance on Mobile Source Air Toxics Analysis in NEPA Documents" (FHWA, 2016). The analysis will identify which of the three MSAT categories the project belongs in based on screening criteria in the guidance. CT-EMFAC will be used to provide emission estimates for MSAT pollutants, if there will be higher potential MSAT effects.	The analysis will identify which of the three MSAT categories the project belongs in based on screening criteria in the guidance. CT-EMFAC will be used to provide emission estimates for the MSAT pollutants, if there will be higher potential MSAT effects.
Asbestos	Not required.	Not a mobile source issue. Refer to Section 4.2.2	Not a mobile source issue. Refer to Section 4.2.2
Visibility-Reducing Particles	Not required.	Not required.	Typically, not a transportation issue and no analysis are required. Controls under current regulations only apply to stationary sources.
Sulfates	Not required.	Not required.	Sulfate is typically not a mobile source issue.

Pollutant	Conformity	NEPA	CEQA
Hydrogen Sulfide	Not required.	Not required.	H ₂ S is typically not a mobile source issue.
Vinyl Chloride	Not required.	Not required.	Typically, not a transportation issue and no analysis are required.

CO Analysis

There are no CO non-attainment areas in California; all areas in California are currently designated attainment/unclassified or maintenance for the state and federal CO standards.

The CO Protocol was developed for project-level conformity (hot-spot) analysis and was approved for use by the U.S. EPA in 1997. It provides qualitative and quantitative screening procedures, as well as quantitative (modeling) analysis methods to assess project-level CO impacts. The qualitative screening step is designed to avoid the use of detailed modeling for projects that clearly cannot cause a violation, or worsen an existing violation, of the CO standards. Although the protocol was designed to address federal standards, it has been recommended for use by several air pollution control districts in their CEQA analysis guidance documents and should also be valid for California standards because the key criterion (8-hour concentration) is similar: 9 ppm for the federal standard and 9.0 ppm for the state standard.

The Transportation Project-Level Carbon Monoxide Protocol (University of California, Davis, Institute of Transportation Studies (UCD ITS) (1997)) was used to determine the analysis needed regarding potential project-level CO impacts. The guidelines in the Protocol comply with the Clean Air Act, federal and state conformity rules, NEPA, and CEQA.

Sections 3 and 4 of the CO Protocol describe the methodology for determining whether a CO hot-spot analysis is required. The Protocol provides two conformity requirement decision that are designed to assist project sponsors in evaluating the requirements that apply to their project. The CO Protocol applies to new projects and was used here. Below is a step-by-step explanation:

3.1.1. Is the project exempt from all emissions analyses? **NO**. The proposed project would add northbound and southbound truck climbing lanes, shoulders, create two at-grade access-controlled intersections and build a median barrier.

3.1.2. Is the project exempt from regional emissions analyses? **YES**. The proposed project would include the addition of two at-grade access-controlled intersections, which is exempt from regional emissions analyses per 40 CFR 93.127. The controlled intersection means intersection signalization or intersection channelization that is exempt from regional emissions analyses per 40 CFR 93.127. In addition, this project is not a regionally significant project.

3.1.3. Is the project locally defined as regionally significant? **NO**. NCTC completed an Interagency Consultation Review in order to evaluate if it is a regionally significant project. The project obtained concurrence from the EPA, FHWA, NSAQMD, and Caltrans that the proposed project is not a regionally significant project on June 22, 2020, June 23, 2020, June 15, 2020, and June 23, 2020, respectively.

3.1.4. Is the project in a federal attainment area? **YES**. The proposed project is located in a federal attainment area for the federal CO standard.

3.1.4a. Is the project in a California attainment area? **YES**. The proposed project is located in a State attainment area for the federal CO standard.

3.1.9. Examine local impacts and proceed to Section 4.

Section 4 of the Protocol assesses local analysis. Assessment of the project's effect on localized ambient air quality is based on an analysis of CO and PM₁₀ emissions, with the focus on CO. Localized emissions of CO and PM₁₀ may increase with the implementation of the proposed project. CO is used as an indicator of a project's direct and indirect impact on local air quality because CO does not readily disperse in the local environment in cool weather when the wind is fairly still. As stated in the Protocol, the determination of project-level CO impacts shall be carried out according to the Local Analysis flow chart. The following discussion provides explanatory remarks for every step of the local analysis.

Level 1: Is the project in a CO nonattainment area? **NO**. The proposed project is located in a federal attainment area.

Level 1 (Continued): Was the area redesignated as "attainment" after the 1990 Clean Air Act? **YES**. The EPA approved the maintenance plans and redesignation request in 1998.

Level 1 (Continued): Has "continued attainment" been verified with the local Air District, if appropriate? **YES**. The proposed project continues to be in attainment for CO. (Proceed to Level 7).

Level 7: Does the project worsen air quality? **NO**. The project is not anticipated to worsen air quality based on the criteria "a," "b," and "c" from the CO Protocol:

Based on the screening procedure in section 4.7.1 of the CO Protocol, only projects that are likely to worsen air quality necessitates further analysis. The following criteria were used to determine whether this project is likely to worsen air quality in the project area:

- a) The project significantly increases the percentage of vehicles operating in cold start mode. Increasing the number of vehicles operating in cold start mode by as little as 2% should be considered potentially significant.
 - The project will have no impact on the percentage of vehicles operating in cold start mode.
- b) The project significantly increases traffic volumes. Increases in traffic volumes in excess of 5% should be considered potentially significant. Increasing the traffic volume by less than 5% may still be potentially significant if there is a corresponding reduction in average speeds.

- The proposed project would increase traffic volumes along the roadway segments. However, this increase in traffic volumes is not considered significant, since the proposed facility would not increase CO emissions during future years in comparison with those during the baseline year (**Table 2-31**).
- c) The project worsens traffic flow. For uninterrupted roadway segments, a reduction in average speeds (within a range of 3 to 50 mph) should be regarded as worsening traffic flow. For intersection segments, a reduction in average speed or an increase in average delay should be considered as worsening traffic flow.
- The proposed project would improve traffic flow by alleviating congestion from local roads and providing truck climbing lanes.

Based on the screening above by the CO Protocol, the build alternative under consideration will not worsen the air quality in the project area. Therefore, the proposed project is found satisfactory and no further analysis is needed.

Particulate Matter Analysis

Emissions Analysis

PM emissions were estimated for baseline, no-build, and all build alternatives for the opening year and the design year. The results can be seen in **Table 2-31**.

PM_{2.5} and PM₁₀ would slightly change between build and no-build alternatives for the opening and the design years. These emissions would also gradually increase during both opening and design years in comparison with the baseline year due to increases in VMT and emissions from tire wear, brake wear and road dust. However, operational air quality impacts by PM would not be substantial. Further, no cumulatively considerable impacts to PM in unclassified/attainment are anticipated.

Hot-Spot Analysis

In November 2015, the U.S. EPA released an updated version of Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas (Guidance) for quantifying the local air quality impacts of transportation projects and comparing them to the PM NAAQS (75 FR 79370). The project is not subject to PM conformity analysis because it is located within a PM_{2.5} unclassified /attainment and a PM₁₀ unclassified area.

NO₂ Analysis

The U.S. EPA modified the NO₂ NAAQS to include a 1-hr standard of 100 ppb in 2010. Currently there is no federal project-level nitrogen dioxide (NO₂) analysis requirement. However, NO₂ is among the near-road pollutants of concern.

For project-level analysis, NO₂ assessment protocol is not available. However, CT-EMFAC2017 provides a NO_x (combination of NO and NO₂) emissions estimate. Near-road NO₂ concentrations will likely be dominated by overall NO_x emissions. As long as ozone is present at relatively low (background) concentrations, most of the directly emitted NO will convert to NO₂ within a few seconds. Therefore, NO_x emissions overall can serve as a useful analysis surrogate for NO₂ [the Caltrans Near-Road Nitrogen Dioxide Assessment (Caltrans, 2012)].

For NEPA, future Build scenario emissions were compared with future No-Build scenario emissions; for CEQA, future scenario emissions (Build and No-Build) were compared with Baseline (Existing Conditions) emissions (**Table 2-31**). As shown in **Table 2-31**, there would be slight changes between the build alternatives and the no-build alternative during opening and design years, and the emissions of NO_x for the future Build years (2024 and 2044) would be lower than those for the existing year (2018). Overall emissions are not anticipated to be substantial with the proposed project. Therefore, operational air quality impacts by NO_x would not be substantial. Further, no cumulatively considerable impacts to criteria pollutants are anticipated as the project's operational emissions are not significant under the build Alternatives.

Mobile Source Air Toxics Analysis

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 large 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.

The proposed project proposes to add northbound (NB) and southbound (SB) truck climbing lanes, a median barrier, shoulders and two at-grade access-controlled intersections and is located in proximity to the sensitive receptors (residential areas, **Figure 2-13**). 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 and CEQA requirements would not be addressed.

In addition, **Table 2-29** shows MSAT emissions estimated for baseline, no-build, and build alternatives for the opening year (2024) and design year (2044). The latest version of CT-EMFAC2017 was used to estimate emissions of benzene, 1,3-butadiene, formaldehyde, acrolein, naphthalene, DPM, and POM.

Table 2-29. 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 (2018)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Opening Year (2024) No-Build Alternative	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Opening Year (2024) Build Alternative	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Design Year (2044) No-Build Alternative	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Design Year (2044) Build Alternative	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001

Source: EMFAC2017

Table 2-29 shows that the estimated MSAT emissions would not be substantially changed between existing, opening, and design years. It is expected there would be no appreciable difference in overall MSAT emissions between the future build and the future no-build alternatives.

Avoidance and Minimization Measures

Short-Term (Construction)

Most of the construction impacts to air quality are short-term in duration and, therefore, will not result in long-term adverse conditions. 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.

Caltrans standard specifications include the requirement to minimize or eliminate dust through application of water or dust palliatives. Control measures will be implemented as specified in Caltrans 2018 Standard Specifications Section 10-5 "Dust Control", Section 14-9 "Air Quality" and Section 18 "Dust Palliatives."

- 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.

- NSAQMD Rule 226 (Fugitive Dust Emissions) will be applied within the proposed project area to reduce ambient concentrations and limit fugitive emissions for fine particulate matter from construction activities.
- Water or a dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions.
- A soil binder will be spread on any unpaved roads used for construction purposes and on all project construction parking areas.
- Trucks will be washed as they leave the right-of-way as necessary to control fugitive dust emissions.
- 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.
- A dust control plan will be developed documenting sprinkling, temporary paving, speed limits and timely re-vegetation of disturbed slopes, as needed, to minimize construction impacts to existing communities.

- Equipment and materials storage sites will be located as far away from residential and park uses as practicable. Construction areas will be kept clean and orderly.
- Track-out reduction measures, such as, gravel pads at project access points will be applied to minimize dust and mud deposits on roads affected by construction traffic.
- All transported loads of soils and wet materials will be covered before transport or adequate freeboard (space from the top of the material to the top of the truck) will be provided to minimize emission of dust during transportation.
- Dust and mud that are deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to reduce PM emissions.
- To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

In addition, the NSAQMD 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 other such measures the Air Pollution Control Officer may approve to accomplish satisfactory results for temporary and/or extended suppression of PM₁₀ emissions.

Long-Term (Operational)

The project would not increase operational CO and NO_x emissions during the future years in comparison with the existing condition; therefore, no avoidance, minimization or mitigation measures are required.

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2.3.4. 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.

2.3.5. Noise

Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969 and the California Environmental Quality Act (CEQA) provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless those measures are not feasible. The rest of this section will focus on the NEPA/Title 23 Part 772 of the Code of Federal Regulations (23 CFR 772) noise analysis; please see Chapter 3 of this document for further information on noise analysis under CEQA.

NATIONAL ENVIRONMENTAL POLICY ACT AND 23 CFR 772

For highway transportation projects with Federal Highway Administration (FHWA) involvement (and the Department, as assigned), the Federal-Aid Highway Act of 1970 and its implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA). The following table lists the noise abatement criteria for use in the NEPA/23 CFR 772 analysis.

Table 2-30: Noise Abatement Criteria

Activity Category	NAC, Hourly A- Weighted Noise Level, Leq(h)	Description of activity category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B ¹	67 (Exterior)	Residential.
C ¹	67 (Exterior)	Active sport areas, amphitheatres, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	No NAC—reporting only	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical, etc.), and warehousing.
G	No NAC—reporting only	Undeveloped lands that are not permitted.
¹ Includes undeveloped lands permitted for this activity category.		

Figure 2-15 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 300m (1000 ft)	110	Rock Band
Gas Lawn Mower at 1 m (3 ft)	100	
Diesel Truck at 15 m (50 ft), at 80 km (50 mph)	90	Food Blender at 1 m (3 ft)
Noisy Urban Area, Daytime	80	Garbage Disposal at 1 m (3 ft)
Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	30	Library
Quiet Rural Nighttime	20	Bedroom at Night, Concert Hall (Background)
	10	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Figure 2-15. Noise Levels of Common Activities

According to the Department's *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011*, a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as a 12 dBA or more) or when the future noise level with the project approaches or exceeds the NAC. A noise level is considered to approach the NAC if it is within 1 dBA of the NAC.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that would likely be incorporated in the project.

The Department's *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. Noise abatement must be predicted to reduce noise by at least 5 dB at an impacted receptor to be considered feasible from an acoustical perspective. It must also be possible to design and construct the noise abatement measure for it to be considered feasible.

Factors that affect the design and constructability of noise abatement include, but are not limited to, safety, barrier height, topography, drainage, access requirements for driveways, presence of local cross streets, underground utilities, other noise sources in the area, and maintenance of the abatement measure. The overall reasonableness of noise abatement is determined by the following three factors: 1) the noise reduction design goal of 7 dB at one or more impacted receptors; 2) the cost of noise abatement; and 3) the viewpoints of benefited receptors (including property owners and residents of the benefited receptors).

Affected Environment

Caltrans' Environmental Engineering Branch completed a Noise Study Report (NSR) (Caltrans 2020) for the project, in conformance with the requirements of 23 CFR 772, "Procedures for Abatement of Highway Traffic Noise," and this serves as the basis for discussion of the project's potential noise impacts. The NRS entails looking at the setting of the noise impact and then how large or perceptible any noise increase would be in the given area. Even though the NSR (or noise technical memorandum) does not specifically evaluate the significance of noise impacts under CEQA, it must contain the technical information that is needed to make that determination in the environmental document.

The Existing Environment

A field investigation was conducted on April 30, 2020 to identify land uses that could be subject to traffic and construction noise impacts from the proposed project. The following land uses were identified in the project area:

- Single-family residences: Activity Category B
- Mobile Park & RV: Activity Category C
- Golden Chain Motel: Activity Category E
- Commercial Retail: Activity Category F

Although all developed land uses are evaluated in this analysis, noise abatement is only considered for areas of frequent human use that would benefit from a lowered noise level. Accordingly, this impact analysis focuses on locations with defined outdoor activity areas, such as residential backyards.

Noise measurements were performed at five locations in the project area to determine existing background noise levels (as shown in **Figures 2-16 through 2-20**) and to validate the traffic noise model. The measured noise levels at these locations ranged from 51 to 64 A-weighted decibels hourly equivalent sound level (dBA Leq[h]).



Figure 2-16. Noise Receptor Locations

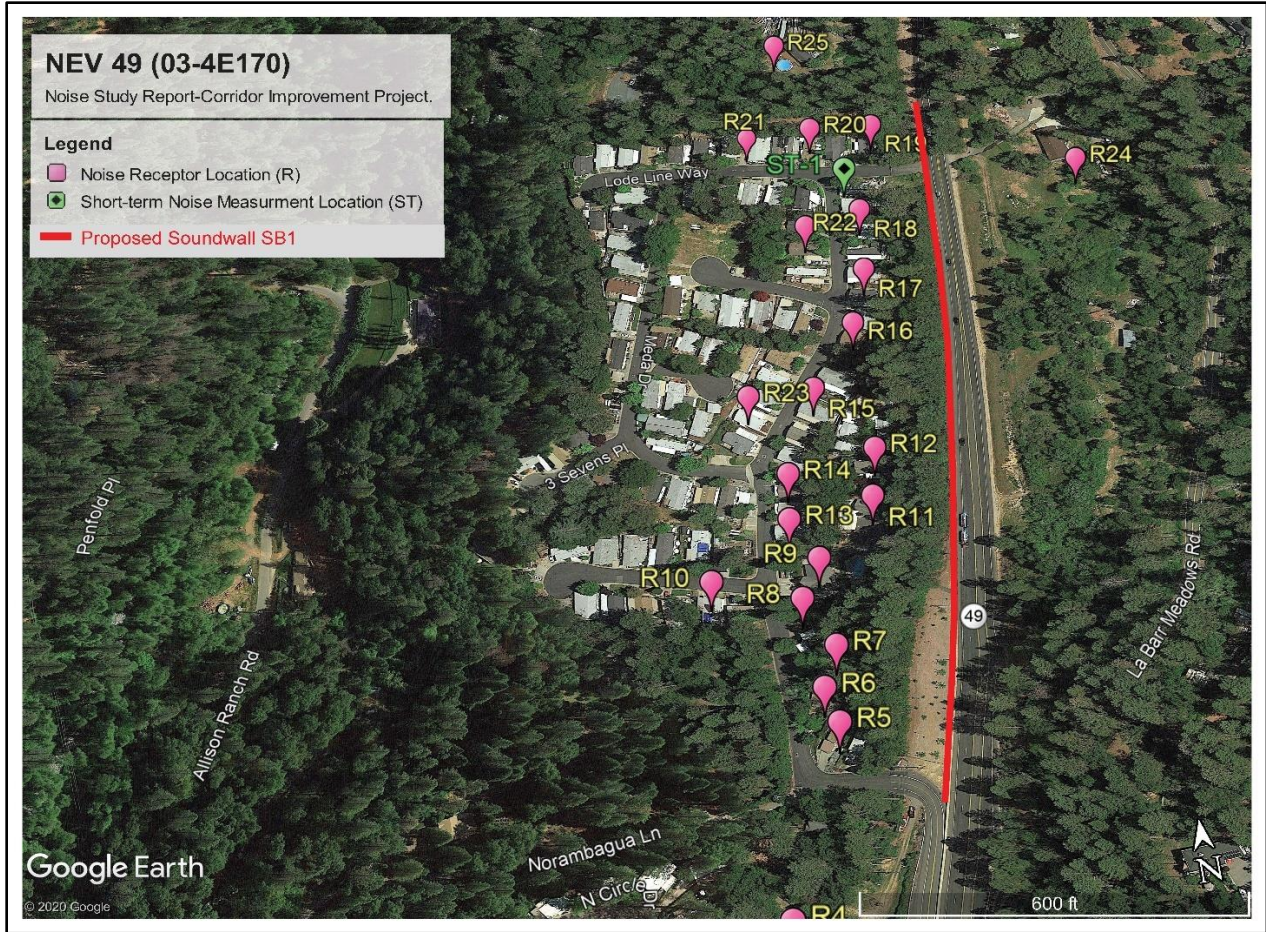


Figure 2-17. Noise Receptor Locations and Proposed Soundwall Location

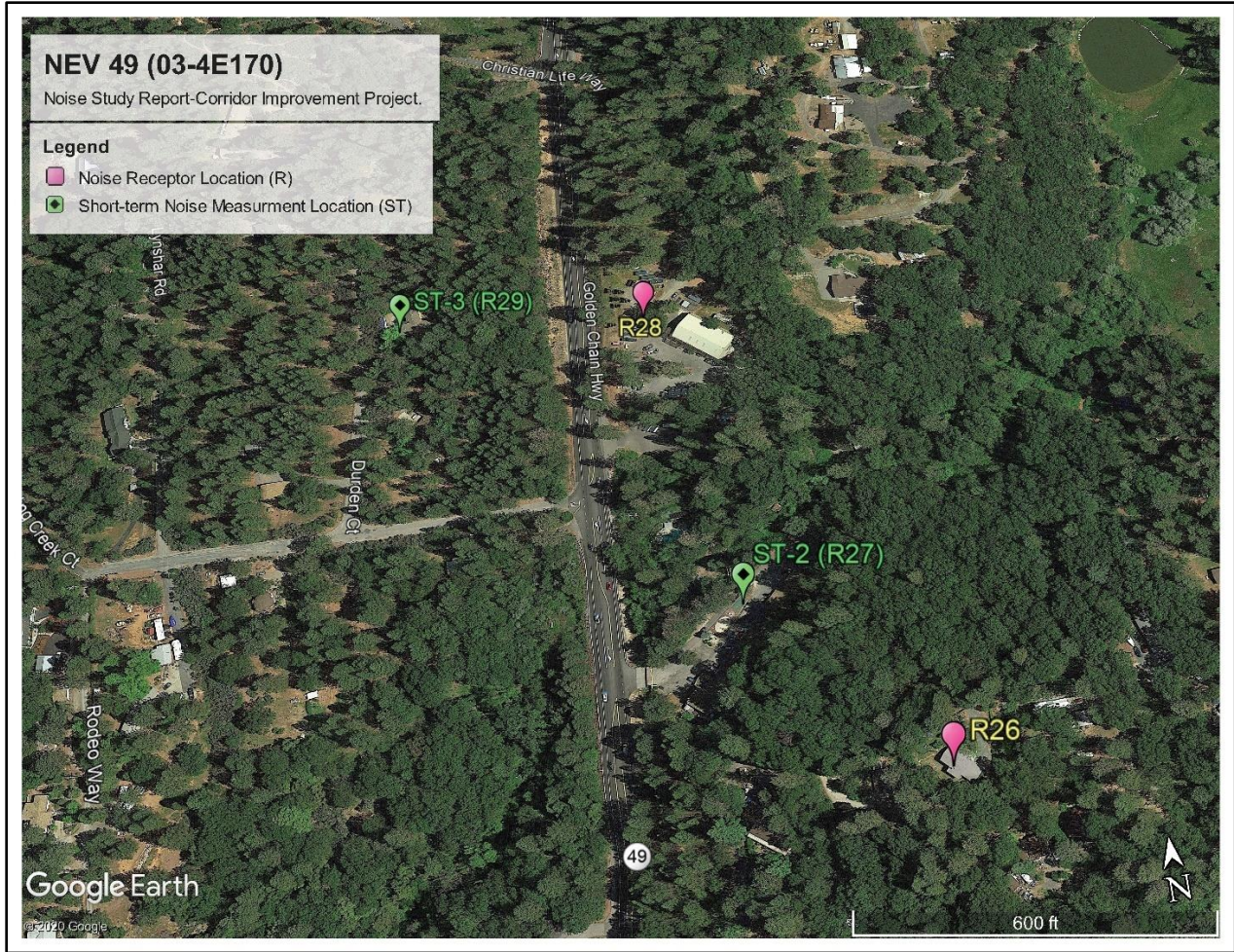


Figure 2-18. Noise Receptor Locations

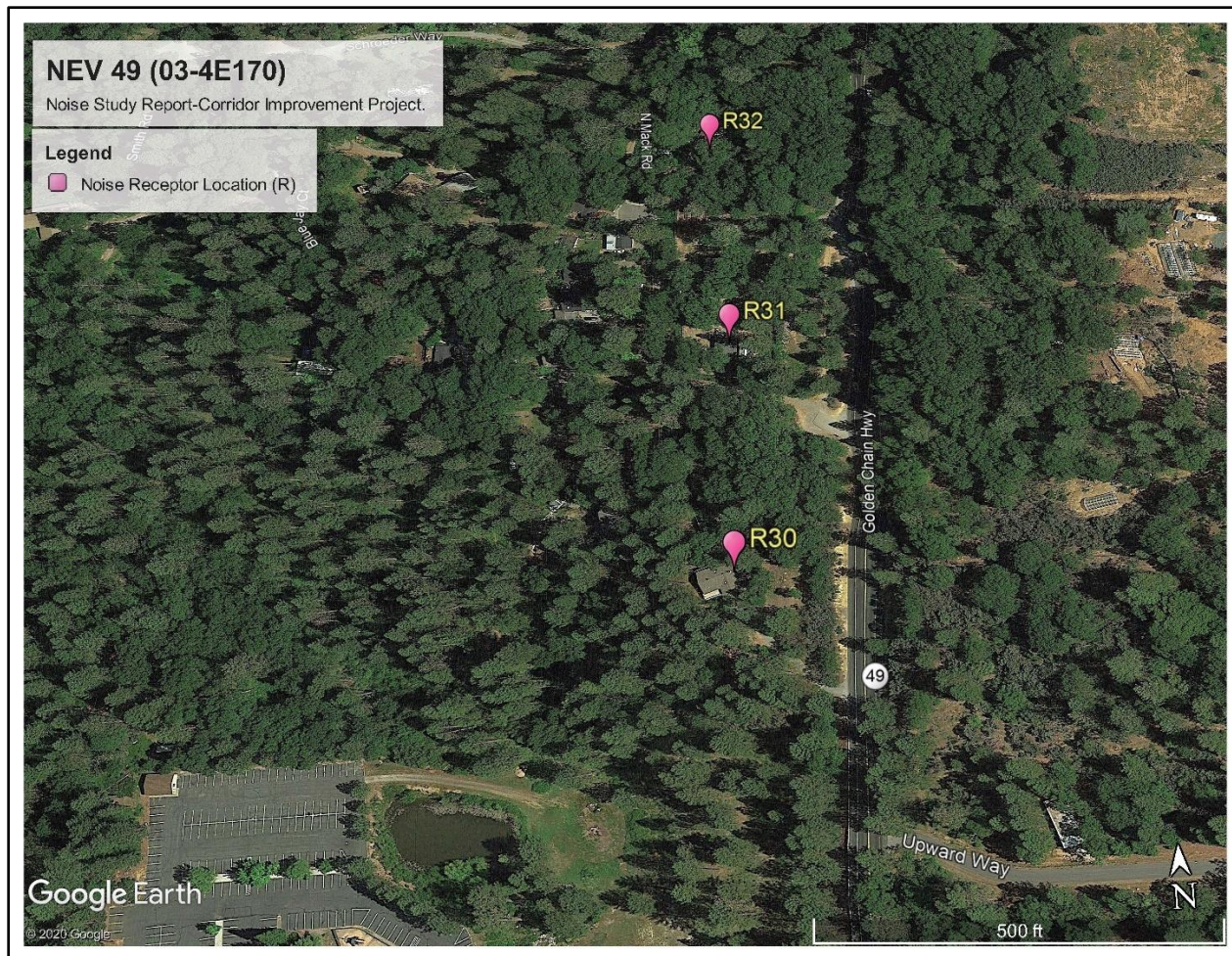


Figure 2-19. Noise Receptor Locations

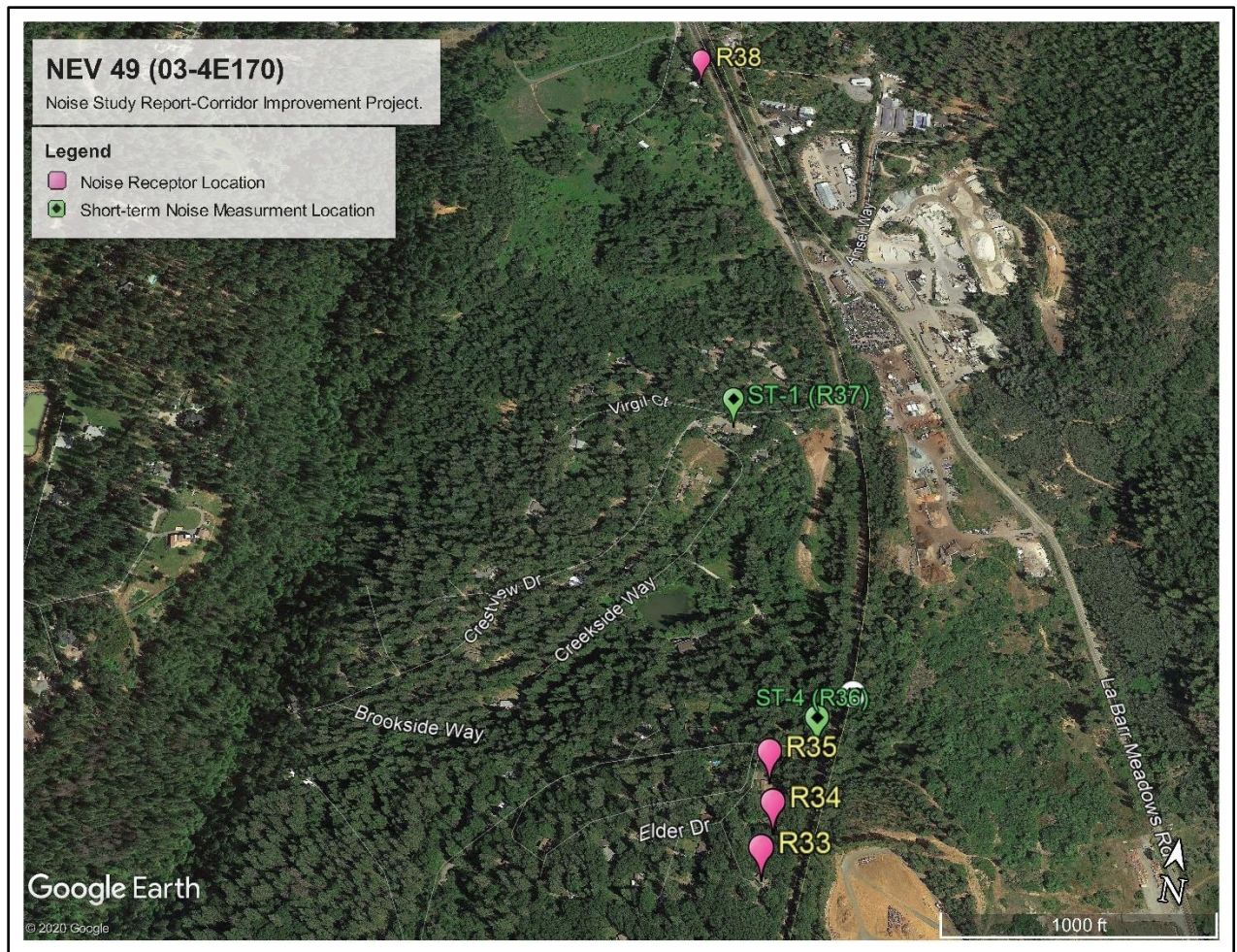


Figure 2-20. Noise Receptor Locations

Short-Term Monitoring

Table 2-31 summarizes the results of the short-term noise monitoring conducted in the project area.

Table 2-31. Summary of Short-Term Measurements

Receptor	Address	Land Uses	Start Time	Duration (minutes)	Measured (Leq)	Autos	Heavy Trucks
ST-1	10041 Golden Star	Residential	1:20 p.m.	15	60.9	441	10
ST-2	Golden Chain	Motel	1:55 p.m.	15	59.9	276	11
ST-3	14845 Durden Ct.	Residential	2:35 p.m.	15	51.6	281	5
ST-4	10026 Smith Rd.	Residential	3:20 p.m.	15	64.1	390	14
ST-5	10079 Crestview Dr.	Residential	3:50 p.m.	15	52.7	293	9

Traffic Noise Model (TNM) 2.5 was used to compare measured traffic noise levels to modeled noise levels at field measurement locations. **Table 2-32** compares measured and modeled noise levels at each measurement location (**Figure 2-15 through Figure 2-19**).

Table 2-32. Comparison of Measured to Predicted Sound Levels in the TNM Model

Measurement Position	Measured Sound Level (dBA)	Modeled Sound Level (dBA)	Measured Minus Modeled (dB)
ST-1	60.9	63.2	-2.3
ST-2	59.9	60.7	-0.8
ST-3	51.6	55.3	-3.7
ST-4	64.1	66.6	-2.5
ST-5	52.7	50.9	1.8

The predicted sound levels are within two to three dBA of the measured sound levels and are, therefore, considered to be in reasonable agreement with the measured sound levels. As such, no further adjustment of the model was necessary.

Environmental Consequences

No-Build Alternative

The No-Build Alternative would not affect noise because the proposed project would not be constructed.

Build Alternatives

Predicted Noise Levels

Federal Highway Administration (FHWA) Traffic Noise Model (TNM), Version 2.5 was utilized to obtain noise levels for Existing worst-hour, Design year (2044) Build and no Build conditions.

The project includes five measured locations and 38 modeled receiver locations representing Activity Category B, C, E and F land use.

The existing loudest-hour Leq(h) noise levels were calculated to range from 56 to 69 dBA for residential land use (Activity Category B) depending on location and the distance to the highway. All residential land use has been evaluated for noise impact and modeled receivers represent many homes that are acoustically equivalent to that site condition.

For design year (2044) under the no-build condition, the predicted traffic noise levels ranges from 58 to 71 dBA for residential land use (Activity Category B). For design year (2044) under the Build condition, the predicted traffic noise levels ranges from 60 to 73 dBA.

The predicted noise increase from the existing-year to the design-year no Build condition is an estimated two dBA. The increase in noise in design-year Build and No Build is an estimated one to five dBA depending on the location of the receiver and the highway improvements proposed at that location. For some receivers, the predicted noise levels under design-year conditions will approach or exceed the Noise Abatement Criteria (NAC) of 67 dBA for Activity Category B land use.

The proposed project will not result in a substantial noise increase as defined in the Protocol under CEQA.

Construction (short-term)

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Noise associated with construction is controlled by Caltrans' Standard Specification Section 14-8.02, "Noise Control," which states the following:

- Do not exceed 86 dBA Lmax at 50 feet from the job site activities from 9 p.m. to 6 a.m.
- Control and monitor noise resulting from work activities.

Table 2-33 summarizes **noise levels produced by construction equipment** that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 90 dBA at a distance of 50 feet and noise produced by construction equipment would be reduced over distance at a rate of about six dBA per doubling of distance.

Table 2-33. Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)
Scrapers	89
Bulldozers	85
Heavy Trucks	88
Backhoe	80
Pneumatic Tools	85
Concrete Pump	82

Source: Federal Transit Administration, 2006. See also:
http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans' Standard Specifications Section 14.8-02. Construction noise would be short-term, intermittent and overshadowed by local traffic noise.

Table 2-34. Summary of Reasonableness Allowances —Barrier SB1

Barrier I.D.: SB1						
Critical Receptor: ST-1						
Design Year Noise Level, dBA $L_{eq}(h)$: 72						
Design Year Noise Level Minus Existing Noise Level: 6						
Design Year with Barrier	6-Foot Barrier	8-Foot Barrier	10-Foot Barrier	12-Foot Barrier	14-Foot Barrier	16-Foot Barrier
Barrier Noise Reduction, dB	4	6	7	8	9	9
Number of Benefited Receptors	0	27	33	33	33	33
Reasonable Allowance Per Benefited Receptor	0	\$107,000	\$107,000	\$107,000	\$107,000	\$107,000
Total Reasonable Allowance	0	\$2,889,000	\$3,531,000	\$3,531,000	\$3,531,000	\$3,531,000

The predicted noise level at Golden Chain Motel for existing-year is estimated at 63 dBA and for design-year under Build condition at 67 dBA. The predicted noise level is below the noise abatement criteria of 72 dBA for Motel land use. Therefore, no impact is predicted from the proposed project to this location.

Table 2-35 shows the predicted existing-year noise level ranges from 56 dBA to 69 dBA and the design-year under Build conditions, the noise level ranges from 58 dBA to 73 dBA. An increase of two dBA to seven dBA is estimated depending on the location of the receiver and highway improvements proposed at that location. Traffic noise impacts are predicted at these residences and noise abatement must be considered.

*R19	SB1	Residential	64	66	70	2	4	B (67)	A/E	66	3	0	64	5	3	63	6	3	62	7	3	62	8	3	62	8	2
R20	SB1	Residential	59	61	65	2	4	B (67)	None	61	3	0	60	4	0	59	6	2	58	5	2	57	6	2	57	6	2
R21	SB1	Residential	56	58	61	2	3	B (67)	None	59	2	0	58	3	0	57	5	2	55	5	1	54	6	1	54	6	2
R22	SB1	Residential	60	62	63	2	1	B (67)	None	59	4	0	58	5	4	56	7	4	56	7	4	55	8	4	55	8	4
R23	SB1	Residential	60	62	63	2	1	B (67)	None	59	4	0	58	5	11	56	7	11	56	7	11	55	8	11	55	8	11
R24	-	Residential	57	59	64	2	5	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R25	-	Residential	62	64	66	2	2	B (67)	A/E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R26	-	Residential	61	63	65	2	2	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R27	-	MOTEL	63	65	67	2	2	E (72)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*R-28	-	Commercial	66	68	71	2	3	F (none)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*R29	-	Residential	56	58	61	2	3	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R30	-	Residential	62	64	67	2	3	B (67)	A/E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R31	-	Residential	60	62	66	2	4	B (67)	A/E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R32	-	Residential	60	62	66	2	4	B (67)	A/E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*R33	-	Residential	67	69	72	2	3	B (67)	A/E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*R34	-	Residential	67	69	72	2	3	B (67)	A/E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*R35	-	Residential	67	69	71	2	2	B (67)	A/E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*R36	-	Residential	69	71	73	2	2	B (67)	A/E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*R37	-	Residential	56	58	60	2	2	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*R38	-	Residential	62	64	64	2	0	B (67)	None	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 2-35. Predicted Future Noise and Barrier Analysis

Avoidance, Minimization, and/or Abatement Measures

Minimization Measures (Construction):

- Notify the residents within 100 feet of the project area in advance of nighttime construction activities.
- All equipment shall have sound-control devices that are no less effective than those provided on the original equipment. No equipment may have an unmuffled exhaust.
- As directed by Caltrans, implement appropriate additional noise minimization measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work and installing acoustic barriers around stationary construction noise sources.

Abatement Measures

Traffic noise impacts occur when the predicted noise level approaches or exceeds the NAC. Under 23 CFR 772, when predicted noise levels result in a traffic noise impact, noise abatement measures that are reasonable and feasible must be considered.

Various abatement measures were considered for this project; however, due to the design, noise barriers are the appropriate form of noise abatement for this particular project.

A noise barrier was evaluated for impacted receivers at Tall Pines Estates, a residential mobile home park, Activity Category land use B. The barrier evaluated is labeled as Barrier SB1 and was found to be acoustically feasible, providing at least five dBA of noise reduction.

Based on the studies completed to date, the Department intends to incorporate noise abatement in the form of a barrier at approximately 112+00.00 to 128+00.00, with an average height of 10 feet. Calculations based on preliminary design data show that the barrier will reduce noise levels by seven dBA for 33 residences at a cost of \$3,531,000.

For any noise barrier to be considered reasonable from a cost perspective, the estimated cost of the noise barrier should be equal to or less than the total cost allowance calculated for the barrier. The cost calculations of the noise barrier must include all items appropriate and necessary for construction of the barrier, such as traffic control, drainage modification, retaining walls, landscaping for graffiti abatement and right-of-way costs. Construction cost estimates are presented in the Noise Abatement Decision Report (NADR). The NADR includes noise abatement construction cost estimates that have been prepared and signed by the project engineer based on site-specific conditions. Construction cost estimates are compared to reasonableness allowances in the NADR to identify which wall configurations are reasonable from a cost perspective.

During the Design phase, a NADR will be completed to determine the feasibility of noise abatement given the allotted allowances from **Table 2-34**, Summary of Reasonableness Allowances — Barrier SB1. The final decision on noise abatement will be made upon completion of the final project design.

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2.3.6. 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 July 2020 for this project. The primary purpose of the Energy Analysis is to fulfill the requirements of the National Environmental Policy Act

(NEPA) and the California Environmental Quality Act (CEQA), and, to provide information for inclusion into the Environmental Document.

The baseline year used for analysis is 2018. **Table 2-36** shows the Existing (2018) traffic conditions on SR 49 in Nevada County from post miles 11.1 to 13.3.

Table 2-36. Summary of Existing Traffic Conditions

Scenario/ Analysis Year	Location	AADT Total	AADT Truck	% Truck	VMT (mi)	Average Speed During AM Peak Travel (mph)	Average Speed During PM Peak Travel (mph)
Existing/Baseline 2018 Year	Post Miles 11.1-13.3	28,554	1,542	5.4	1,700,466	52.6	53.1

Average speed between northbound and southbound was used to provide AM & PM peak travel (mph)

Table 2-36 shows the reported truck percentage is 5.4% within the proposed project location and the average travel speed during AM and PM peaks is approximately 53 mph.

No-Build Alternative

The no-build (no action) alternative consists of those transportation projects that are already planned for construction by or before 2024. Consequently, the no-build alternative represents future travel conditions in the SR 49 Widening study area without the SR 49 Widening project and is the baseline against which the other SR 49 Widening alternatives will be assessed to meet NEPA requirements. **Table 2-37** presents summary of long-term operational impacts of the No-Build traffic conditions.

Table 2-37. Summary of Long-Term Operational Impacts of No-Build Traffic Conditions

Scenario/ Analysis Year	Location	AADT Total	AADT Truck	% Truck	VMT (mi)
No Build Year 2024	Postmiles 11.1 to 13.3	29,626	1,600	5.4	1,779,849
No Build Year 2044	Postmiles 11.1 to 13.3	31,416	1,696	5.4	2,044,457

Source: Transportation Analysis Report (2019) State Route 49 Corridor Improvement Project

Project Build Alternatives

Table 2-38 shows traffic conditions for the future years on SR 49 in Nevada County from 0.25 miles north of La Barr Meadow Road/Allison Ranch Road to the Grass Valley City limits.

Table 2-38. Summary of Long-Term Operational Impacts of Build Traffic Conditions

Scenario/ Analysis Year	Location	AADT Total	AADT Truck	% Truck	VMT (mi)
Build Year 2024	Postmiles 11.1 to 13.3	33,445	1,806	5.4	1,783,611
Build Year 2044	Postmiles 11.1 to 13.3	41,620	2,247	5.4	2,060,762

Source: Transportation Analysis Report (2019) State Route 49 Corridor Improvement Project

Comparison of Existing and Expected Traffic Conditions

Table 2-39 summarizes design features and operational impacts on traffic conditions of the existing year, the no-build opening and design years, and the build opening and design years within the proposed project.

Table 2-39. Summary of Long-Term Operational Impacts on Traffic Conditions of Existing, No-Build, and Build Alternatives

Scenario/Analysis Year	Location	Design Features and Operational Impacts on Traffic Conditions
Baseline (existing) 2018 Year	North of La Barr Meadow Road/Allison Ranch Road to the Grass Valley City limits Postmiles 11.1 to 13.3	Design feature: none Operational impacts <ul style="list-style-type: none"> - Total AADT: 28,554 - Total truck AADT: 1,542 - Average % truck: 5.4 - VMT (mi): 1,700,466
No-Build Alternative Opening 2024 Year		Design feature: none Operational impacts <ul style="list-style-type: none"> - Total AADT: 29,626 - Total truck AADT: 1,600 - Average % truck: 5.4 - VMT (mi): 1,779,849
No-Build Alternative Design 2044 Year		Design feature: none Operational impacts <ul style="list-style-type: none"> - Total AADT: 31,416 - Total truck AADT: 1,696 - Average % truck: 5.4 - VMT (mi): 2,044,457
Build Alternative Opening 2024 Year		Design feature: Truck climbing lanes facility with a median barrier and two intersections Operational impacts <ul style="list-style-type: none"> - Total AADT: 33,445 - Total truck AADT: 1,806 - Average % truck: 5.4 - VMT (mi): 1,783,611
Build Alternative Design 2044 Year		Design feature: Truck climbing lanes facility with a median barrier and two intersections Operational impacts <ul style="list-style-type: none"> - Total AADT: 41,620 - Total truck AADT: 2,247 - Average % truck: 5.4 - VMT (mi): 2,060,762

Table 2-39 shows that the build alternatives during both opening and design years would increase average daily traffic volumes, as well as, increased truck travel in comparison with the no-build alternative. VMT in the build alternatives would also increase in comparison with those in the existing condition and the no-build alternative during both opening and design years.

Environmental Consequences

No-Build Alternative

Under the No-Build Alternative, no construction would take place. Therefore, there would be no impacts related to energy use and consumption.

Build Alternatives

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 /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.

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-CET2018 (version 1.3). The energy consumption presented is based on the best information available at the time of the calculations. The energy represents the construction fuel consumption.

Construction-related fuel consumption by operation and annual was calculated for the proposed project and provides the following conclusions:

Tables 2-40 and 2-41 show that construction of the proposed project 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 206,877 gallons from diesel-powered equipment, and then 132,534 gallons from gasoline-powered equipment. These represent small demands (approximately: 2.6% in diesel fuel then 0.3% in gasoline) on Nevada County's gasoline and diesel sales estimates (i.e. 8 million of diesel gallons and 38 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. 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.

Table 2-40. Construction Fuel Consumption by Operation

Project Phases	Diesel Fuel (gal)	Gasoline Fuel (gal)
Land Clearing/Grubbing	7,029	3,899
Roadway Excavation/Removal	54,080	27,973
Structural Excavation/Removal	3,464	2,925
Base/Subbase/Imported Borrow	49,994	23,633
Structure Concrete	15,530	8,633
Paving	25,146	16,100
Drainage/Environment/Landscaping	18,128	10,256
Traffic Signalization/Signage/Striping/Painting	33,506	31,470
Project Total	206,877	124,881

Table 2-41. Annual Construction Fuel Consumption

Construction year	Fuel Consumption (gallons)	
	Diesel Equipment	Gasoline Equipment
2024	22,864	12,149
2025	143,671	77,418
2026	40,341	35,315
Total	206,877	124,881

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 the build alternatives during existing, opening, and design years. **Table 2-42** below contains 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 five and 75 mph.

Table 2-42. Summary of Comparative Fuel Consumption Analysis

Scenario/ Analysis Year	Daily Vehicles Miles of Travel	Vehicle Percentage (%)		Daily Fuel Consumption (gallons)	
		Truck	Non-Truck	Diesel	Gasoline
Baseline Year, 2018	1,700,466	5.4	94.6	321,448	2,513.034
Opening Year, 2024					
No-Build Alternative	1,779,849	5.4	94.6	322,741	2,166.812
Build Alternative	1,783,611	5.4	94.6	363,123	2,442.469
Design Year, 2044					
No-Build Alternative	2,044,457	5.4	94.6	293.944	1,572.089
Build Alternative	2,060,762	5.4	94.6	383.380	2,066.484

The additional travel lanes and intersections proposed under both alternatives would affect traffic operations and increase vehicle capacity along SR 49 in the project area. The daily gasoline fuel consumption from the alternatives during the design year is higher than that from the no-build scenario due to increases in VMT. The overall gasoline fuel consumption from the build alternatives during the future years would decrease in comparison with that from existing conditions due to increases in carpooling, hybrid, and electric cars that would improve the emission factors. In order to decrease diesel fuel consumption, the application of newer and more fuel-efficient vehicles would result in an overall lower potential for an increase in the energy consumption.

Additionally, the project would generally offset some of the project’s potential energy usage if it includes elements that would reduce VMT, such as providing facilities for pedestrians and bicyclists, which is in the design.

Overall, the proposed project would not result in an increase in the consumption of energy in comparison with the existing conditions.

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 would add northbound (NB) and southbound (SB) truck climbing lanes, median barrier, shoulders, and two at-grade access-controlled intersections. As such, it is unlikely to increase indirect energy consumption though increased fuel usage.

Minimization Measures

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:

- 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
- 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

Long-term Operational

The following conservation measures for direct energy consumption from mobile sources shall be implemented when practical:

- Participate in Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). The ARFVTP includes electric vehicle charging infrastructure, hydrogen refueling infrastructure, natural gas vehicles, and lower carbon transportation fuel
- Participate in vanpool and carsharing programs

References

Association of Environmental Professionals (2016) CEQA Guidelines Appendix F, Energy Conservation.

California Department of Transportation CAL-CET2018, Version 1.3.

California Department of Transportation CT-EMFAC2017, Version 1.0.2.

California Energy Commission (2014) Alternative and Renewable Fuel and Vehicle Technology Program.

California Energy Commission (2018) California Annual Retail Fuel Outlet Report Results (CEC-A15).

Transportation Analysis Report (2019) State Route 49 Corridor Improvement Project, Fehr & Peers.

2.4. BIOLOGICAL ENVIRONMENT

2.4.1. Natural Communities

Affected Environment

A Natural Environment Study (NES) was completed in August 2020 for the project. The NES summarizes technical documents such as focused species studies, wetland assessments, and biological assessments related to effects on biological resources in the Biological Study Area (BSA) for use in the environmental document.

Vegetation communities, including wetlands and other waters (ephemeral, intermittent, and perennial streams) are present within the ESL. The natural community vegetation types identified in the ESL are described in the following subsections.

These communities within the study area were classified based on plant community descriptions provided in “A Guide to Wildlife Habitats of California” (Mayer and Laudenslayer, eds, 1988), “A Manual of California Vegetation” (Sawyer and Keeler-Wolf, 1995), and “Preliminary Descriptions of the Terrestrial Natural Communities of California” (Holland, 1986).

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 hordeaceus*), 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*).

Ponderosa Pine Forest

Ponderosa pine forest is characterized by a predominance of ponderosa pine (*Pinus ponderosa*). This vegetation community occurs in the Sierra Nevada from approximately 980 ft to 6,900 ft. above mean sea level (Sawyer et al. 2009).

While ponderosa pine is the predominant species in this vegetation community within the survey area, associate species include Douglas-fir (*Pseudotsuga menziesii*), incense cedar (*Calocedrus decurrens*), and black oak (*Quercus kelloggii*) also exist. Other tree species

observed in the overstory include Pacific madrone (*Arbutus menziesii*), big-leaf maple (*Acer macrophyllum*), and California buckeye (*Aesculus californica*).

The understory includes large patches of whiteleaf manzanita (*Arctostaphylos viscida*), which reach 12 feet high in some locations, and ponderosa pine saplings. Other common species that are found in the shrub understory include the following:

- Poison-oak (*Toxicodendron diversilobum*)
- Himalayan blackberry (*Rubus armeniacus*)
- Buckbrush (*Ceanothus cuneatus*)
- Deer brush (*Ceanothus integerrimus*)
- California coffeeberry (*Rhamnus californica*)
- Wood rose (*Rosa gymnocarpa*)

The herbaceous layer is dominated by everlasting pea (*Lathyrus latifolius*), which often forms extensive patches, Sierran mountain misery (*Chamaebatia foliolosa*), and sky lupine (*Lupinus nanus*). Other, less common herbaceous species include the following.

- Rainbow iris (*Iris hartwegii*)
- Davy's gumplant (*Grindelia hirsutula* var. *davyi*)
- Soap plant (*Chlorogalum pomeridianum*)
- California Indian pink (*Silene californica*)
- Miner's lettuce (*Claytonia parviflora*)
- Creeping honeysuckle (*Lonicera hispidula*)

Arroyo Willow Riparian Woodland

Arroyo willow riparian woodland is present in the survey area (not within the ESL) along drainages and seeps and are 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 americana*), cattail (*Typha* sp.), seep spring monkeyflower (*Mimulus guttatus*), water cress (*Nasturtium*

officinale), yellow flag iris (*Iris pseudacorus*), creeping buttercup (*Ranunculus repens*), tall flatsedge/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 on Natural Communities.

Build Alternatives

Non-Native Annual Grassland

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.

Ponderosa Pine Forest

The proposed project would require some tree removal; however, given that this community is abundant within Nevada County, the removal of individual trees would not impact this abundant community.

Arroyo Willow Riparian Woodland

The proposed project would not have any direct or indirect impacts to this community, as it is not present within the project boundary.

Avoidance and Minimization Measures

Non-Native Annual Grassland

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.

2.4.2. 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] Part 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.

Affected Environment

A Natural Environment Study (NES) was completed in August 2020 for the project. The NES summarizes technical documents such as focused species studies, wetland assessments, and biological assessments related to effects on biological resources in the Biological Study Area (BSA) for use in the environmental document.

An Aquatic Resources Delineation (wetland delineation) was conducted (April 2019) using the routine determination methods described in the 1987 Manual (Environmental Laboratory 1987) and the 2010 Western Mountains, Valleys and Coast Supplement (U.S. Army Corps of Engineers 2010). Potential wetland and non-wetland waters of the United States were mapped and delineated in the field in accordance with indicators and guidance in USACE Regulatory

Guidance Letter No. 05-05, dated December 7, 2005 (U.S. Army Corps of Engineers 2005). A preliminary jurisdictional determination (USACE concurred with the delineation) was received from USACE on May 16, 2019.

The Environmental Study Limit (ESL, Appendix) for this project contains forested wetlands, scrub-shrub wetlands, seasonal wetlands, intermittent streams, perennial streams, ponds, and roadside ditches.

Environmental Consequences

No-Build Alternative

Under the No-Build Alternative, no construction would take place. Therefore, there would be no impacts on Wetlands and Other Waters.

Build Alternatives

Construction of the proposed project would directly/permanently affect jurisdictional wetlands and jurisdictional waters of the U.S. and State. Each Alternative will result in the following impacts:

Alternative 3A (Signalized Intersections)

- Direct/permanent impacts to approximately 0.26 acre of jurisdictional wetlands
- Direct/permanent impacts to approximately 0.11 acre other waters of the U.S./Waters of the State

Alternative 3B (Roundabouts)

- Direct/permanent impacts to approximately 0.28-acre of jurisdictional wetlands
- Direct/permanent impacts to approximately 0.13-acre other waters of the U.S./Waters of the State

Avoidance and Minimization Measures

Avoidance and minimization measures to protect wetlands and other waters include the following:

- Where working areas encroach on live or dry 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 and , streams/ wetlands. Discharge of sediment would be contained through the use of RWQCB-approved measures to avoid sediment from entering protected waters.
- Oily or greasy substances originating from the Contractor's operations would not be allowed to enter, or be placed, where they would later enter tributary waters.

- Asphalt concrete would not be allowed to enter tributary waters.
- The wetland and other waters outside of direct construction impact areas would be delineated as environmentally sensitive areas (ESAs) on the project plans and in the project specifications. The boundaries of the ESA would be clearly marked in the field by the installation of a temporary high visibility fence. This fencing would be implemented as the first order of work and would remain in place until all construction activities are complete.

Permit Required Compensation

If necessary, mitigation for jurisdictional wetlands and other waters of the U.S. and State would 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) and the Guidelines for Monitoring Riparian Mitigation (1994).

The National Fish and Wildlife Foundation’s Sacramento District California In-Lieu Fee Program provides a mitigation option that can be used by Caltrans and other permittees to compensate for authorized impacts to aquatic resources. Caltrans would likely purchase mitigation credits through the In-Lieu Fee Program to compensate for impacts to wetlands and waters of the U.S. and State. If credits from In-Lieu Fee Program are not available, Caltrans would purchase credits from an approved Mitigation Bank.

2.4.3. 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 [2.4.5] 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

A Natural Environmental Study (NES) was completed August 2020. The NES summarizes technical documents such as focused species studies, wetland assessments, and biological assessments related to effects on biological resources in the Biological Study Area (BSA) for use in the environmental document.

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

The study area is predominately urban/rural which range from rural residential homes to barns with manicured yards and driveways. These areas are dominated by man-made structures such as buildings, parking lots, gardens and/or driveways. Urban areas are scattered along the project route. The two main categories of vegetation present in urban habitat are ruderal herbaceous species or exotic species used for landscaping.

Physical conditions consist of developed areas and natural communities, including wetlands and non-wetland waters. Developed areas are generally void of vegetation, although ruderal vegetation is present in unpaved areas, including road shoulders and medians which are subject to repeated disturbance and vegetation management.

While ponderosa pine is the predominant species in this vegetation community within the survey area, associate species include Douglas-fir (*Pseudotsuga menziesii*), incense cedar (*Calocedrus decurrens*), and black oak (*Quercus kelloggii*) also exist. Other tree species observed in the overstory include Pacific madrone (*Arbutus menziesii*), big-leaf maple (*Acer macrophyllum*), and California buckeye (*Aesculus californica*).

The understory includes large patches of whiteleaf manzanita (*Arctostaphylos viscida*), which reach 12 feet high in some locations, and ponderosa pine saplings.

Environmental Consequences

No-Build Alternative

Under the No-Build Alternative, no construction would take place. Therefore, there would be no impacts on Plants.

Build Alternatives

There are no observed occurrences of Federal or State listed special status plant species within the ESL. Additionally, no special status plant species were detected during botanical surveys; therefore, there will be no impacts from the Build Alternatives on plants.

Avoidance, Minimization, and/or Mitigation Measures

The proposed project would have no effect on any Federal or State listed special status plant species; therefore, no avoidance, minimization or mitigation measures are required.

2.4.4. Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries), and the California Department of Fish and Wildlife (CDFW) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Act. All other special-status animal species are discussed here, 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

Affected Environment

A Natural Environment Study (NES) was completed in August 2020 for the project. The NES summarizes technical documents such as focused species studies, wetland assessments, and biological assessments related to effects on biological resources in the Biological Study Area (BSA) for use in the environmental document.

Wildlife species commonly associated with the habitat in the area 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*), Coyote (*Canis latrans*), and mule deer (*Odocoileus hemionus*).

Biological surveys were conducted by qualified Caltrans' staff to assess impacts to Animal Species within the BSA. The only animals the project may effect are the resident population of Nevada County Deer.

Nevada County Deer

Riparian woodland vegetation is essential habitat to a wide range of species in the Central Valley. Riparian habitats provide food, water, migration corridors, cover from predators, nesting, and thermal insulation. Periodic flooding provides riparian woodland corridors with nutrients that allow for high density and structural diversity of upland and aquatic species. The structure provides a safe migration corridor for the dispersal of wildlife (Holland 1986).

In the case of deer, the corridors link winter and summer habitats which serve the life cycle of the animal. Generally, animal movement occurs along riparian corridors and/or low-lying "saddles" which connect various micro-habitat areas. The streams and drainages near the project ESL (Ellens Creek, a tributary to Wolf Creek) constitute riparian corridors which are capable of support for both migratory and resident wildlife movement (Nevada County 1995).

The deer population in Nevada County is made up of both resident and migrating individuals. The western portion of the county in which the proposed project lies supports both resident deer and winter populations of migrating deer. The migratory populations tend to move seasonally. Their winter ranges are located on the eastern slope of the Sierra Nevada mountain range near Reno, Nevada. Their summer ranges are located on the timbered western slope of the Sierra Nevada mountain range in the middle of Nevada County. Much of the summer range is in the forested mid-county area currently designated for timber preserve. The east side of the County supports portions of the Truckee-Loyalton migratory deer herd, while the western portion of the County supports the migratory Nevada City deer herd as well as resident populations of the Motherlode deer herd. Winter ranges of the Nevada City and Motherlode herds often overlap (Nevada County 1995).

The project is located in a rural development area with wildlife habitat adjacent to the project area. The project area is used by black-tail deer from the migratory Nevada City deer herd, as well as resident populations of the Motherlode deer herd which presumably use the area for daily and seasonal migration activity, foraging, and cover.

Caltrans Maintenance crews record data of deer carcasses that are collected from the roadway along SR 49. The data includes PM location, species collected, the number collected, and collection date. The data does not represent all animal vehicle collisions in the project area

since some deer may not have been collected for various reasons. The data used in this analysis represents dates from April 1990 to August 2018.

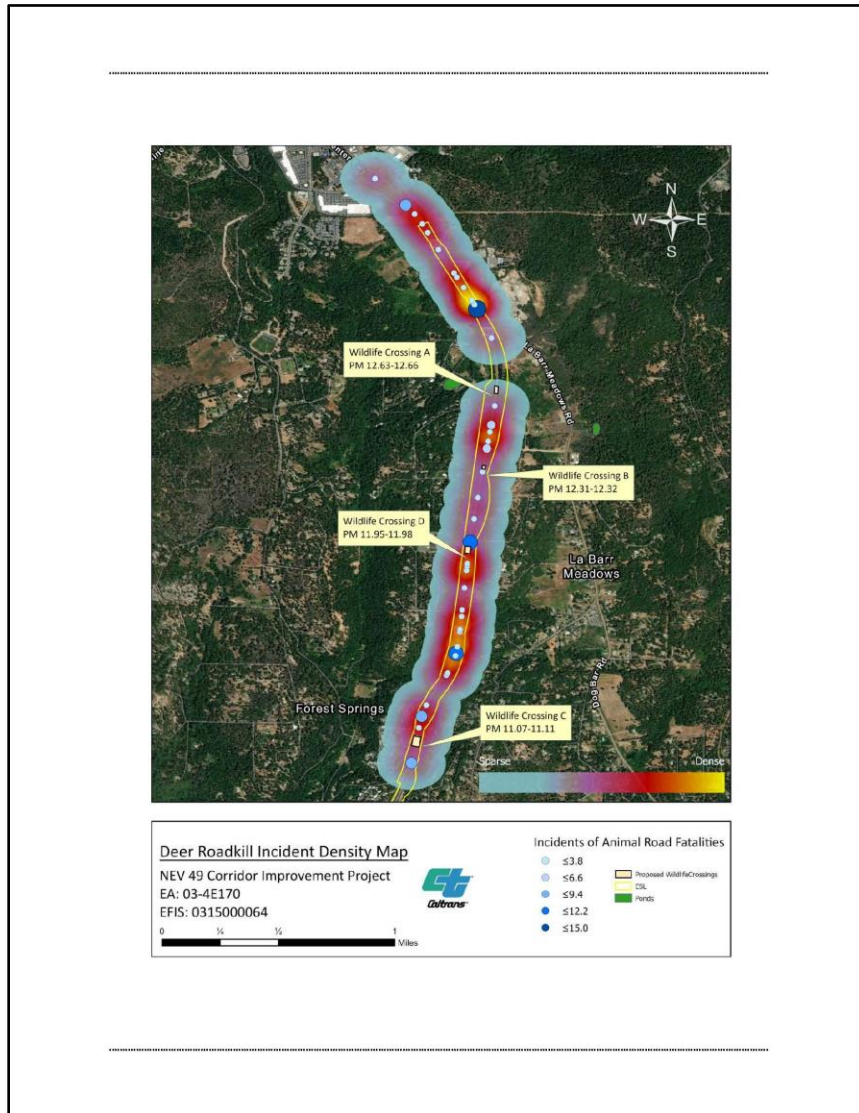


Figure 2-21. Potential Wildlife Crossing Locations

Avoidance and Minimization Measures

Caltrans biologists surveyed the project area and identified four locations where wildlife crossings would be feasible. These locations were then ranked from A – D, with A being the most optimal location for the wildlife crossing and D the least. The number of deer carcasses collected was imported onto an ArcMap layer and compared to the potential wildlife crossing locations chosen by Caltrans biologists.

Refer to **Figure 2-21** below for a map that identifies preferred locations for wildlife crossings and locations with the most animal vehicle collisions. Biologists will work with Caltrans Design on the locations of wildlife crossings.

Environmental Consequences

No-Build Alternative

Under the No-Build Alternative, no construction would take place. Therefore, there would be no impacts on Animals.

Build Alternatives

Due to the construction of additional lanes, increasing the width of both shoulders and adding a concrete median barrier will increase the distance animals must travel to cross the highway. This may have the potential to increase incidents of animal/vehicle conflicts along the corridor.

To increase safety for motorists and deer on the SR 49 corridor, Caltrans intends to install one to two wildlife crossings that would be approximately a 12 foot by 12 foot box culvert under SR 49 which would allow animals to pass safely. The length of the wildlife crossing shall be less than 200 feet. If a 200 foot wildlife crossing is not feasible for the Design Engineers, a location with the shortest route and at the highest point of the slopes shall be chosen. Caltrans biologists are continuing to work with Caltrans Design Engineers to identify the ideal locations for the wildlife crossings.

2.4.5. 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

A Natural Environment Study (NES) was completed in August 2020 for the project. The NES summarizes technical documents such as focused species studies, wetland assessments, and biological assessments related to effects on biological resources in the Biological Study Area (BSA) for use in the environmental document.

Biological surveys were conducted by qualified Caltrans' staff to assess impacts to Threatened and Endangered Species (TES) within the BSA. The only TES species the project may effect is the California Red-Legged Frog (CRLF).

Biological surveys in the study area determined that the historic range of the California Red-Legged Frog (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.

Nearest Observed CRLF Occurrences and Designated Critical Habitat

The nearest observed occurrence of CRLF was in 2007 approximately nine miles northwest of the project near the South Yuba River drainage in Nevada County near Sailor Flat in the Bloomfield quadrangle. The second nearest location was observed in 2006 and is approximately 18 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 occurrence does not record the observation date. The third nearest occurrence was observed in 2009 and is approximately 22 miles southeast of the project area at the South Fork of the American River drainage in El Dorado County in the Georgetown quadrangle. The nearest critical habitat (NEV-1) is approximately eight miles north of the ESL, in Nevada County, near Sailor Flat in the Bloomfield quadrangle.

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 eight 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 three foot 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 (*Micropterus spp.*), bullfrogs (*Lithobates catesbeianus*), crayfish (*Procambarus clarkia*) and mosquito fish (*Gambusia affinis*), all who predate on CRLF (there are many more predators to CRLF than listed here). Bullfrogs from a pond with a large population will quickly invade a pond.

A CRLF Site Assessment was conducted within the ESL and within a one-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:

- United States Geologic Service (USGS) 7.5-minute topographic maps (Grass Valley quadrangle).
- Aerial photography provided by Caltrans.
- Records of the CDFW CNDDDB (2020).

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 the 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*), bass (*Micropterus sp.*), blue gill (*Lepomis macrochirus*), mosquito fish (*Gambusia affinis*), and other sunfish (*Centrarchids sp.*). These non-native species appear to be well established in the site assessment area.

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.

Environmental Consequences

No-Build Alternative

Under the No-Build Alternative, no construction would take place. Therefore, there would be no impacts on Threatened and Endangered Species.

Build Alternatives

Based on the results of surveys, analyses of habitat conditions and requirements, and current range of CRLF, it was determined that the project would have “no effect” on CRLF. 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 Bear watershed where the project is located. The closest occurrence of CRLF was observed in 2007 and is nine miles northwest of the project near the South Yuba River drainage at Sailor Flat. The second closest occurrence (observed in 2006) is 18 miles away from the site assessment area and the third closest observed occurrence is 22 miles (observed in 2009) from the site assessment area.
- The project area is approximately two miles within CRLFs current range and only just in historic range. USFWS designated critical habitat (NEV-1) is approximately eight miles from the project.
- No new barriers to CRLF dispersal (removal of culverts and placement of additional structures) would be implemented as part of this project. Most new culverts being placed would be larger in size, making them more likely to be used as future dispersal routes.
- Caltrans would incorporate avoidance and minimization measures to reduce the project impacts to aquatic features.
- A qualified biologist would be contracted to assure there would be no harm to any wildlife species.

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 observed during surveys, it is unlikely that CRLF would be present; therefore, the project would not affect CRLF.

Avoidance and Minimization Measures

Based on the discussion above, CRLF are not present within the project area; therefore, no avoidance and minimization measures would be required.

2.4.6. 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

A Natural Environment Study (NES) was completed in August 2020 for the project. The NES summarizes technical documents such as focused species studies, wetland assessments, and biological assessments related to effects on biological resources in the Biological Study Area (BSA) for use in the environmental document.

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 October 5 – 7, 2016, April 10, 2020, and July 7 – 8, 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 Ellens/Wolf Creek 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 on Invasive Species.

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 and Minimization Measures

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.

References

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California Invasive Plant Council. 2018. California Invasive Plant Inventory Database. Available: <http://www.calipc.org/paf/>.

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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 (Department) 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

Except as provided in Public Resources Code Section 21099, would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CEQA Significance Determinations for Aesthetics

a) Less Than Significant

Scenic vistas are often panoramic views with high quality compositional and picturesque value. Scenic vistas do not exist within the project vicinity. The majority of this project area is a narrow highway with minimal views to the adjacent properties. The existing topography and existing vegetation restrict views into the surrounding foothills. As the highway travels north the views open to reveal the commercial properties adjacent to the highway.

The roadway widening will increase cut and fill slopes. Retaining walls will have a low to moderate impact on the scenic quality of the project location. The existing vegetation removal required to facilitate the upgrades will be kept to the minimum. As such the project would have little effect on scenic vistas. It is anticipated that the impact will lessen as the project is finished and the roadway is replanted.

The project would implement Caltrans' standard measures (AES-1 and AES-2) identified in Chapter 2. Therefore, the changes from construction and operation would not result in a substantial adverse effect on a scenic vista. This impact would be less than significant.

b) No Impact

As discussed in the Visual/Aesthetics section in Chapter 2, there are no roadways within or near the project area that are designated in federal, state, or local plans as a scenic highway.

Therefore, implementation of the proposed project would not damage scenic resources, such as trees, rock outcroppings, and historic buildings along a scenic highway.

c) Less Than Significant

The large cut and fill slopes would have erosion control measure applied that would eventually grow in to a natural state. With appropriate replanting around the cleared zones, the vegetated character of the roadway would be re-established; therefore, the proposed project would have a less than significant impact on the existing visual character or quality.

d) No Impact

No new source of lighting or glare are proposed as part of the project.

3.2.2. Agriculture and Forest Resources

<p>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.</p>				
Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CEQA Significance Determinations for Agriculture and Forest Resources

a) No Impact

No farmland has been identified within the project area; therefore, there would be no impacts to farmland.

b) No Impact

There are no parcels under a Williamson Act contract within the project limit; therefore, there would be no impacts to Williamson Act parcels.

c) and d) No Impact

There are no parcels in the project area zoned forest or Timberland Production. Therefore, the project will result in no impact and will not conflict or result in rezoning forest land or Timberland Production.

e) No Impact

There are no other changes anticipated to farmland or forest land.

3.2.3. Air Quality

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

CEQA Significance Determinations for Air Quality

a) Less Than Significant

The project would not interfere with the timely implementation of Transportation Control Measures identified in the applicable State Implementation Plan (SIP) and regional conformity analysis, which required Nevada County Transportation Commission (NCTC) to complete an Interagency Consultation Review (IRC) in order to evaluate the project of air quality concern, as discussed in Chapter 2. The project attained concurrence from EPA, FHWA, Northern Sierra Air Quality Management District (NSAQMD) and Caltrans that the proposed project is not a regionally significant project on June 22, 2020.

The area does not cause or contribute to any new localized CO, PM_{2.5}, and/or PM₁₀ violations, or delay timely attainment of any NAAQS or any required interim emission reductions or other milestones during the timeframe of the transportation plan.

The proposed project does not require a project-level PM and/or CO hot spot analysis, since it is in the unclassified/attainment area for National PM and CO Standards.

For the reasons stated above, the proposed project would not conflict with any relevant Air Quality Management Plans, Caltrans or the Nevada County Transportation Commissions Regional Transportation Plans; therefore, impacts would be less than significant.

b) Less Than Significant

The proposed project is located in a nonattainment area for a National O₃ Standard. NCTC completed an Interagency Consultation Review (IRC) and concluded that the proposed project is not a regionally significant project; therefore, the project would not result in any cumulatively considerable net increase of any criteria pollutants.

NCTC completed an Interagency Consultation Review (ICR) in order to evaluate if it is a regionally significant project. The project obtained concurrence from EPA, FHWA, NSAQMD, and Caltrans that the proposed project is not a regionally significant project on June 22, 2020, June 23, 2020, June 15, 2020, and June 23, 2020, respectively.

c) Less Than Significant

This project location is in the unclassified/attainment area for National CO, PM₁₀, and/or PM_{2.5}. The area does not cause or contribute to any new localized CO, PM_{2.5}, and/or PM₁₀ violations, or delay timely attainment of any NAAQS or any required interim emission reductions or other milestones during the timeframe of the transportation plan. CO and NO_x would be lower in the future than those in the existing conditions; therefore, the proposed project would not expose sensitive receptors to substantial pollutant concentrations.

The overall operational emissions of criteria pollutants (CO and NO_x) within the proposed project area under the future build alternatives would not be anticipated to increase in comparison with those under the baseline year. Compared with the PM emissions during the existing year, the slightly increased PM emissions in the build alternatives during the future years would be likely due to the increases in non-exhaust components such as brake wear, tire wear and road dust that would be generated by increases in VMT.

The estimated overall MSAT emissions would not be appreciable changes between no-build and build alternatives as well as between the baseline and the future build alternatives.

The proposed project is located in a nonattainment area for a National O₃ Standard. This project is listed and financially constrained in FSTIP. NCTC completed an ICR and concluded that the proposed project is not a regionally significant project.

Consequently, the project would not expose sensitive receptors to substantial pollutant concentrations; therefore, operational air quality impacts are less than significant, and no cumulatively considerable impacts are anticipated.

d) Less Than Significant

Temporary construction activities could generate fugitive dust from the operation of construction equipment. The project would comply with construction standards adopted by the NSAQMD as well as Caltrans standardized procedures for minimizing air pollutants during construction; therefore, the impact is less than significant.

3.2.4. Biological Resources

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CEQA Significance Determinations for Biological Resources

a) No Impact

As discussed in the Plant Species and the Threatened and Endangered Species sections in Chapter 2, no threatened, endangered, rare, or non-listed special-status plants have been previously reported in the study area, and none were observed in the study area during the May 2019 and July 2019 field surveys.

The only candidate, sensitive or special status species identified was the California Red-Legged Frog (CRLF). Based on the results of surveys, analyses of habitat conditions and requirements, and current range of CRLF, it was determined that the CRLF and its habitat is not within the project area and the project would have “no effect” on the species.

b) Less Than Significant

As discussed in the *Natural Communities* section Chapter 2, ponderosa pine is the predominant species in this vegetation community within the survey area. The proposed project would require some tree removal; however, given that the Ponderosa Pine Forest is abundant within Nevada County, the removal of individual trees would not impact this abundant community.

Additionally, riparian habitat or other sensitive natural communities are not present within the Environmental Study Limits and construction of the proposed project will not substantially effect habitats identified in local or regional plans, policies or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. Therefore, the proposed project would not affect riparian habitat or other sensitive natural communities.

c) Less Than Significant

An Aquatic Resources Delineation (wetland delineation) was conducted (April 2019) using the routine determination methods described in the 1987 Manual (Environmental Laboratory 1987) and the 2010 Western Mountains, Valleys and Coast Supplement (U.S. Army Corps of Engineers 2010). Potential wetland and non-wetland waters of the United States were mapped and delineated in the field in accordance with indicators and guidance in USACE Regulatory Guidance Letter No. 05-05, dated December 7, 2005 (U.S. Army Corps of Engineers 2005). A preliminary jurisdictional determination (USACE concurred with the delineation) was received from USACE on May 16, 2019.

The Environmental Study Limit for this project contains forested wetlands, scrub-shrub wetlands, seasonal wetlands, intermittent streams, perennial streams, ponds, and roadside ditches.

This project would have permanent impacts to wetlands and waters of the U.S./waters of the State:

Alternative 3A (Signalized Intersections)

- Direct/permanent impacts to approximately 0.26-acre of jurisdictional wetlands
- Direct/permanent impacts to approximately 0.11-acre other waters of the U.S./waters of the State (streams, ponds, etc.)

Alternative 3B (Roundabouts)

- Direct/permanent impacts to approximately 0.28-acre of jurisdictional wetlands
- Direct/permanent impacts to approximately 0.13-acres other waters of the U.S./waters of the State

With the implementation of avoidance and minimization measures, along with, permit required compensation, impacts to wetlands and waters of the U.S./waters of the state are anticipated to be less than significant.

d) Less Than Significant

As discussed in Chapter 2, the project is located in a rural development area with wildlife habitat adjacent to the project area. According to Nevada County, the deer population in Nevada County is made up of both resident and migrating animals. The project area is used by black-tail deer from the migratory Nevada City deer herd, as well as resident populations of the Motherlode deer herd which presumably use the area for daily and seasonal migration activity, foraging, and cover. Winter ranges of the Nevada City and Motherlode herds often overlap (Nevada County 1995).

Caltrans Maintenance crews record data of deer carcasses that are collected from the roadway along SR 49. The data includes PM location, species collected, the number collected, and collection date. The data does not represent all animal vehicle collisions in the project area since some deer may not have been collected for various reasons. The data used in this analysis represents dates from April 1990 to August 2018.

Caltrans biologists surveyed the project area and identified four locations where wildlife crossings would be feasible. These locations were then ranked from A – D, with A being the most optimal location for the wildlife crossing and D the least. The number of deer carcasses collected was imported onto an ArcMap layer and compared to the potential wildlife crossing locations by Caltrans biologists.

As part of the design for the project, and to assist with wildlife movement, Caltrans intends to install one to two wildlife crossings that would allow animals to pass safely. With the inclusion of animal undercrossings, project impacts are less than significant.

e and f) No Impact

Nevada County has no local ordinances for tree preservation or an adopted conservation plan. Therefore, the proposed project would not conflict with any local policies or ordinances protecting biological resources. Additionally, this project would 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

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

CEQA Significance Determinations for Cultural Resources

a) Less Than Significant with Mitigation Incorporated

As discussed in the Cultural Resources Identified section, Berriman Ranch Site and Bear River Lumbermill/Bullion Gold Mine were identified as historic resources located within the project Area of Potential Effect (APE) and were assumed eligible for listing in the National Register of Historic Places for the purposes of this project only under PA Stipulation VIII.C.4 *for the purposes of this undertaking only* with permission from Caltrans Cultural Studies Office (CSO) in November of 2019. Only the portion of the archaeological resource within the ADI could be evaluated due to access restrictions.

Berriman Ranch Site (P-29-2730/2745)

This resource has been assumed eligible for the National Register of Historic Places (NRHP) for the purposes of this project only under Criterion d. Project activities within the Area of Direct Impact (ADI) of the Berriman ranch site are limited to extension of the existing Taylorsville Road through to Crestview Drive to create a frontage road along SR 49. The new portion of Taylorsville Road will be constructed with two 11-foot lanes with four-foot shoulders. The maximum depth of excavation is anticipated at two feet. The portion of the site that will be impacted contains no physical features or artifacts that contribute to its historic significance as documented in the MCER. Consequently, the project would not result in physical destruction or damage as defined under 36 CFR 800.5(a)(2)(i). Portions of the site outside the ADI will be protected by the establishment of an Environmentally Sensitive Area; therefore, the finding for the site is No Adverse Effect without Standard Conditions.

Bear River Lumbermill/Bullion Gold Mine (P-29-2755)

This resource has been assumed eligible for the NRHP for the purposes of this project only under Criterion d. Project activities within the ADI of the Bear River Lumbermill/Bullion Gold Mine site include an additional 12-foot wide lane with 8-foot shoulders added to SR 49. This work will involve additional cut on the existing cut slope which is a maximum height of 15 feet. At least a quarter of the work within the Bear River Lumbermill/Bullion Gold Mine site will require the import of fill material. Excavations into the ground for road subbase will be a maximum of five feet deep. Additionally, a new connector road is proposed between SR 49 and La Barr Meadows Road. The road will have 12-foot lanes with eight-foot shoulders. Construction of most of this road will require the import of fill material; however, a few locations will require cut up to five feet deep for road subbase. La Barr Meadows road sits approximately 15 feet higher than SR 49, and the area in between has deep gullies that will require fill material. The portion of the site that will be impacted by the proposed work contains no physical features or artifacts that contribute to its historic significance as documented in the MCER. Consequently, the project would not result in physical destruction or damage as defined under 36 CFR 800.5(a)(2)(i). Portions of the site outside the ADI will be protected by the establishment of an Environmentally Sensitive Area, therefore the finding for the site is considered a No Adverse Effect without Standard Conditions.

In summary, both of these resources are assumed eligible under PA Stipulation VIII.C.4. Based on the evaluations conducted at both the Berriman Ranch Site (P-29-2730/2745) and the Bear River Lumbermill and Bullion Gold Mine (P-29-4755), the project effects to these site deposits within the ADI will not alter the characteristics that might make the sites eligible for the NRHP (Baxter 2020). Pursuant to 36 CRF 800.5 (c) and 106 PA Stipulation X.B.2, the undertaking as a whole will not alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. The portions outside the ADI will be protected by the establishment of an Environmentally Sensitive Area (ESA) and Archaeological Monitoring Areas (AMA) discussed below. The portions of these resources that were not evaluated will be avoided from project activities and therefore will not be adversely affected by the proposed project. Because project effects to the sites deposits within the ADI will not alter the characteristics that might make the site eligible for the NRHA and the remainder of the sites will be protected by establishment of ESAs, the impacts to this site do not meet the Criteria of Adverse Effect. Application of the Criteria of Adverse Effect to sites P-29-2730/2745 and P-23-4755, thus, indicates that a finding of **No Adverse Effect without Standard Conditions** is appropriate for the undertaking as a whole, in accordance with 36 CRF 800.5 (c) and Stipulation X.B.2.a of the 106 PA.

Due to the proximity of project activities to these resources, it was recommended that the sites be protected from any potential project effects by the establishment and enforcement of an Environmentally Sensitive Area as provided for in accordance with Stipulation X.B.1.a and Attachment 5 of the January 2014 *First Amended Programmatic Agreement Among the Federal*

Highway Administration, The Advisory Council on Historic Preservation, The California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act.

The ESA boundaries will be depicted on the project plans as defined in the contract Standard Special Provisions 14-1.02. ESA barriers (high visibility orange fencing) must be erected prior to construction activities as specified in the Finding of Effect and Environmentally Sensitive Area Action Plan (FOE/ESAAP) to avoid project construction activities from encroaching outside the area studied for this project. No project-related activities including but not limited to paving, utility relocation, maintenance, staging, equipment parking, streetlight installation, replanting, or other ground disturbance shall take place within the ESAs.

Implementing **Mitigation Measure CR-1** would reduce potential impacts on the Berriman Ranch and Bear River Lumbermill resources to less than significant:

Mitigation Measure CR-1: Caltrans shall implement the ESA Action Plan, and ensure the ESAs are delineated on Contractor's project plans and delineated in the field by use of high visibility orange fencing to avoid project impacts from encroaching into this boundary.

Finding: Implementation of the FOE/ESA Action Plan required by MM CR-1 would protect the resource from potential adverse construction or operational impacts.

b) Less Than Significant with Mitigation Incorporated

As discussed in the Cultural Resources Identified section, Berriman Ranch Site and Bear River Lumbermill/Bullion Gold Mine were identified as historic resources located within the project APE and were assumed eligible for listing in the National Register of Historic Places for the purposes of this project only under PA Stipulation VIII.C.4 *for the purposes of this undertaking only* with permission from Caltrans Cultural Studies Office (CSO) in November of 2019. Only the portion of the archaeological resource within the ADI could be evaluated due to access restrictions.

Berriman Ranch Site (P-29-2730/2745)

This resource has been assumed eligible for the NRHP for the purposes of this project only under Criterion d. Project activities within the ADI of the Berriman ranch site are limited to extension of the existing Taylorsville Road through to Crestview Drive to create a frontage road along SR 49. The new portion of Taylorsville Road will be constructed with two 11-foot lanes with four-foot shoulders. The maximum depth of excavation is anticipated at two feet. The portion of the site that will be impacted contains no physical features or artifacts that contribute to its historic significance as documented in the Multi-Component Evaluation Report (MCER). Consequently, the project would not result in physical destruction or damage as defined under 36 CFR 800.5(a)(2)(i). Portions of the site outside the ADI will be protected by the

establishment of an Environmentally Sensitive Area; therefore, the finding for the site is No Adverse Effect without Standard Conditions.

Bear River Lumbermill/Bullion Gold Mine (P-29-2755)

This resource has been assumed eligible for the NRHP for the purposes of this project only under Criterion d. Project activities within the ADI of the Bear River Lumbermill/Bullion Gold Mine site include an additional 12-foot wide lane with eight-foot shoulders added to SR 49. This work will involve additional cut on the existing cut slope which is a maximum height of 15 feet. At least a quarter of the work within the Bear River Lumbermill/Bullion Gold Mine site will require the import of fill material. Excavations into the ground for road subbase will be a maximum of 5 feet deep. Additionally, a new connector road is proposed between SR 49 and La Barr Meadows Road. The road will have 12-foot lanes with eight-foot shoulders. Construction of most of this road will require the import of fill material; however, a few locations will require cut up to 5 feet deep for road subbase. La Barr Meadows road sits approximately 15 feet higher than SR 49, and the area in between has deep gullies that will require fill material. The portion of the site that will be impacted by the proposed work contains no physical features or artifacts that contribute to its historic significance as documented in the MCER. Consequently, the project would not result in physical destruction or damage as defined under 36 CFR 800.5(a)(2)(i). Portions of the site outside the ADI will be protected by the establishment of an Environmentally Sensitive Area, therefore the finding for the site is considered a No Adverse Effect without Standard Conditions.

In summary, both of these resources are assumed eligible under PA Stipulation VIII.C.4. Based on the evaluations conducted at both the Berriman Ranch Site (P-29-2730/2745) and the Bear River Lumbermill and Bullion Gold Mine (P-29-4755), the project effects to these site deposits within the ADI will not alter the characteristics that might make the sites eligible for the NRHP (Baxter 2020). Pursuant to 36 CRF 800.5 (c) and 106 PA Stipulation X.B.2, the undertaking as a whole will not alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. The portions outside the ADI will be protected by the establishment of an Environmentally Sensitive Area (ESA) and Archaeological Monitoring Areas (AMA) discussed below. The portions of these resources that were not evaluated will be avoided from project activities and therefore will not be adversely affected by the proposed project. Because project effects to the sites deposits within the ADI will not alter the characteristics that might make the site eligible for the NRHA and the remainder of the sites will be protected by establishment of ESAs, the impacts to this site do not meet the Criteria of Adverse Effect. Application of the Criteria of Adverse Effect to sites P-29-2730/2745 and P-23-4755, thus, indicates that a finding of **No Adverse Effect without Standard Conditions** is appropriate for the undertaking as a whole, in accordance with 36 CRF 800.5 (c) and Stipulation X.B.2.a of the 106 PA.

Due to the proximity of project activities to these resources, it was recommended that the sites be protected from any potential project effects by the establishment and enforcement of an Environmentally Sensitive Area as provided for in accordance with Stipulation X.B.1.a and Attachment 5 of the January 2014 *First Amended Programmatic Agreement Among the Federal Highway Administration, The Advisory Council on Historic Preservation, The California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act*.

The ESA boundaries will be depicted on the project plans as defined in the contract Standard Special Provisions 14-1.02. ESA barriers (high visibility orange fencing) must be erected prior to construction activities as specified in the Finding of Effect and Environmentally Sensitive Area Action Plan (FOE/ESAAP) to avoid project construction activities from encroaching outside the area studied for this project. No project-related activities including but not limited to paving, utility relocation, maintenance, staging, equipment parking, streetlight installation, replanting, or other ground disturbance shall take place within the ESAs.

Implementing **Mitigation Measure CR-1** would reduce potential impacts on the Berriman Ranch and Bear River Lumbermill resources to less than significant:

Mitigation Measure CR-1: Caltrans shall implement the ESA Action Plan, and ensure the ESAs are delineated on Contractor's project plans and delineated in the field by use of high visibility orange fencing to avoid project impacts from encroaching into this boundary.

Finding: Implementation of the FOE/ESA Action Plan required by MM CR-1 would protect the resource from potential adverse construction or operational impacts.

c) Less Than Significant

Based on the known historic uses of the area, and the prior ground disturbance within the APE, and the fact that no prehistoric period cultural resources were identified in the APE, human remains are not expected to be discovered during construction activities. Additionally, the project is required to comply with the following provisions, should human remains be encountered during construction:

Should human remains be uncovered, the statutes of State of California Health and Safety Code Section 7050.5 must be followed. The County Coroner must be notified of the find immediately, and no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. If the human remains are determined to be prehistoric, the Coroner would notify the NAHC, which would determine and notify a Most Likely Descendent. The Most Likely Descendent shall complete the inspection of the site within 24 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

The likelihood of disturbing human remains during construction are considered very low, and procedures are in place to protect remains if uncovered. Therefore, the potential for the project to disturb human remains is less than significant.

3.2.6. Energy

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CEQA Significance Determinations for Energy

a) No Impact

As discussed in Chapter 2 (Energy), during construction, energy use would primarily involve fuel consumption from use of construction equipment and on road vehicles. This consumption would be temporary in nature and would cease once construction is complete.

The additional travel lanes and intersections proposed under both alternatives would affect traffic operations and increase vehicle capacity along SR 49 in the project area. The daily gasoline fuel consumption from the alternatives during the design year is higher than that from the no-build scenario due to increases in VMT. 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. In order to decrease diesel fuel consumption, the application of newer and more fuel-efficient vehicles would result in an overall lower potential for an increase in the energy consumption. Additionally, the project would generally offset some of the project's potential energy usage if it includes elements that would reduce VMT, such as providing facilities for pedestrians and bicyclists, which is in the design.

Overall, the proposed project regarding the non-truck portion would not result in an increase in the consumption of energy in comparison with the existing conditions.

Therefore, the project would not result in a wasteful, inefficient, or unnecessary usage of energy resources during project construction or operation and the project will have no impact on Energy.

b) No Impact

The applicable renewable energy plan for the project area would be the State Renewable Portfolio Standards (RPS), which requires utility agencies to ensure a certain percentage of the electricity they sell is from a renewable source. The project would not conflict with or obstruct this plan; therefore, no impact would occur.

3.2.7. Geology and Soils

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CEQA Significance Determinations for Geology and Soils

a) and c) No Impact

A database search was conducted on the Department of Conservation/California Geological Survey site on 4/13/2020 that discovered no known faults per Earthquake maps:

<https://maps.conservation.ca.gov/cgs/EQZApp/app/> in the project area. The closest fault was in the Bangor Quadrangle in Butte County.

In addition, a geotechnical field investigation would be conducted and a Geotechnical Report with recommended design parameters would be prepared in accordance with Caltrans' Highway Design Manual (HDM) during the PS&E phase of the project. The project would be designed according to Caltrans' seismic standards, as provided in the HDM, minimizing the risk to construction workers or the traveling public from strong seismic ground shaking. Therefore, the proposed project would not effect the potential for landslides, seismic shaking or failure.

b) Less Than Significant

Ground disturbing earthwork associated with road grinding and construction could increase soil erosion rates and loss of topsoil. The BMPs required for the project would minimize erosion and the loss of topsoil; therefore, the impact is less than significant.

d) Less Than Significant

Minimization measures in the Geotechnical Report (compiled during the design phase) and BMPs would be implemented to address any soil issues; therefore, the impact is less than significant.

e) No Impact

The project would not include a septic tank or alternative wastewater disposal systems; therefore, no impact would occur.

f) No Impact

Nevada County is underlain by igneous and metamorphic rock which have the extremely low potential to contain paleontological resources; therefore, no impacts are anticipated.

3.2.8. Greenhouse Gas Emissions

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CEQA Significance Determinations for Greenhouse Gas Emissions

a) Less Than Significant

Compared to existing conditions, GHG emissions would decrease by opening (2024) and horizon (2044) year conditions for all project alternatives due to planned improvements in fuel efficiency and anticipated changes to alternate fuels (such as, electric vehicles). Under horizon year (2044) conditions, the build alternatives (Alternatives 3A & 3B) would have less GHG emissions than the no build alternative (Alternative 4). Therefore, no impacts are anticipated from the project.

Construction GHG emissions would result from material processing, on-site construction equipment, and traffic delays due to construction. These emissions would 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.

Due to the reasons mentioned above, the impact is less than significant.

b) No Impact

The proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHGs, including SB743.

3.2.9. Hazards and Hazardous Materials

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CEQA Significance Determinations for Hazards and Hazardous Materials

a) and b) Less Than Significant

As discussed in Chapter 2 (Hazardous Waste/Materials), 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 pavement markings, wood posts and/or guardrail could expose construction workers or the general public to harmful chemicals unless standard removal measures are followed;

however, the project would implement Caltrans' measures SSP 36-4 and 14-11.14. Therefore, impacts would be less than significant.

c) No impact

There are no schools located within 0.25 miles of the project site. No impact would occur.

d) No impact

There are no Cortese sites within the project area. No impact would occur.

e) No impact

The project is located outside the Nevada County Airport Land Use plan nor are there airports within two miles of the project area. No impact would occur.

f) No impact

Any required road closures during construction would be coordinated with emergency service providers. After project completion, passing opportunities would improve emergency response. Additionally, the completed project may provide an enhanced evacuation route in the event of an emergency evacuation; therefore, no impact would occur.

g) No impact

While the project area is close to the Local Responsibility Area and within the State Responsibility Area for Wildfire the project would not have an impact on wildfire due to the following reasons:

- Caltrans would develop a traffic management plan that would be consistent with local emergency and evacuation plans should a wildfire occur during construction.
- The addition of wider shoulders, median and additional travel lanes would increase the width of the road as a firebreak and provide additional areas for emergency response vehicle staging.

Therefore, the proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

3.2.10. Hydrology and Water Quality

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

CEQA Significance Determinations for Hydrology and Water Quality

a) Less Than Significant

As discussed in Chapter 2, 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. The results of this analysis will be utilized to determine standard water quality protection measures (to be implemented) in order to avoid surface and ground water quality degradation during construction operations. 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 expected to ensure the protection of water resources in the area.

For projects having one acre or more of new impervious area, Caltrans' MS4 Permit requires the implementation of storm water design features and a strategy to treat runoff and manage impervious and pervious areas within the project limits. Specific design features will be vetted and decisions made (storm water related) will be documented within project design and environmental technical studies.

Based on the above information and in Chapter 2 (Water Quality and Storm Water Runoff), the proposed project will have a less than significant impact on water quality standards, waste discharge requirements or degrade surface or ground water quality.

b) Less Than Significant

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 permanently impact proposed drainage appurtenances, storm water treatment, or other design features. 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); therefore, the project will have a less than significant impact.

c) i) Less Than Significant

Compliance with the Construction General Permit (GCP) is anticipated to address the implementation of minimization and avoidance measures. It is expected that standard construction erosion control measures will be utilized to avoid erosion and siltation for the duration of project activities. BMP measures and field 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. With compliance of the GCP, and implementation of Caltrans standard BMP measures, the project will result in a less than significant impact and will not result in substantial erosion or siltation on or off-site.

c) ii) Less Than Significant

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 and the proposed design features for the project; therefore, impacts are anticipated to be less than significant.

c) iii) Less Than Significant

Drainage appurtenances, within the project limits, will be designed to accommodate the anticipated change in flow. In compliance with Caltrans' MS4 Permit, 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 BMPs 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; therefore, impacts are anticipated to be less than significant.

c) iv) No Impact

Research conducted by the Caltrans' Hydraulics Branch on November 28, 2018 indicates the following: According to Federal Emergency Management Agency (FEMA) Floodplain Insurance Rate Map (FIRM) dated February 3, 2010, the limits of the project are within Flood Zone X (outside of the 100-year and 500-year floodplain) or Minimal Flood Hazard Zone with respect to the 100-year and 500-year floodplains; therefore, no Floodplain Hydraulics Study is required and a "no impact" determination is appropriate.

d) and e) No Impact

"No Impact" determinations in this section are based on the scope, description, and location of the proposed project, as well as research conducted by the Caltrans' Hydraulics Branch on November 28, 2018: According to Federal Emergency Management Agency (FEMA) Floodplain Insurance Rate Map (FIRM) dated February 3, 2010, the limits of the project are within Flood Zone X (outside of the 100-year and 500-year floodplain) or Minimal Flood Hazard Zone with respect to the 100-year and 500-year floodplains; therefore, no Floodplain Hydraulics Study is required and a "no impact" determination is appropriate.

Based on the above information, the project will have no impact on flood hazards, tsunami or seiche zones that may release pollutants due to the project being inundated; therefore the project will result in no impact.

Based on the above information in Chapter 2 (Water Quality and Storm Water Runoff), the proposed project will not conflict with or obstruct implementation to a water quality control plan or sustainable groundwater management plan; therefore, no impact.

3.2.11. Land Use and Planning

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CEQA Significance Determinations for Land Use and Planning

a) No 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. Therefore, no impacts are anticipated.

b) No Impact

The project is consistent with local plans and policies, including the Nevada County General Plan and NCTC's State Implementation Plan (SIP) and land uses; therefore, no conflicts are anticipated and will result in no impact.

3.2.12. Mineral Resources

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CEQA Significance Determinations for Mineral Resources

a) and b) No Impact

There is the potential for mineral resources to be present within the project area; however, since mining and extraction operations are not consistent with land use designations within the project area, no impacts to mineral resources or mineral resource recovery sites are anticipated.

3.2.13. Noise

Would the project result in:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CEQA Significance Determinations for Noise

a) and b) Less Than Significant with Mitigation Incorporated

As discussed in the Noise section in Chapter 2, the traffic noise modeling documented in the noise study report indicates that traffic noise levels would increase relative to existing conditions under the proposed project.

Project Noise:

The Department intends to incorporate noise abatement in the form of a barrier at approximately 112+00.00 to 128+00.00, with an average height of 10 feet. Calculations based on preliminary design data show that the barrier will reduce noise levels by seven dBA for 33 residences at a cost of \$3,531,000.

Construction Noise:

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. Construction equipment is expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about six dB per doubling of distance.

c) No Impact

There are no airports or private airstrips found within two miles of the project area and the project does not conflict with any airport land use plans. No impact would occur.

3.2.14. Population and Housing

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CEQA Significance Determinations for Population and Housing

a) No Impact

As discussed in the Community Impacts section of Chapter 2, the proposed project would involve the widening of an existing roadway. The project would not change land uses surrounding the project alignment and would not provide new access to areas that are currently inaccessible via SR 49. The Build Alternatives would not result in changes in accessibility because no new access points are being created. Project-related population growth is not foreseen and the project would result in no impact to population growth.

b) Less Than Significant with Mitigation Incorporated

All the relocations required for the project will come from the community that is adjacent to the project, along SR-49, which has been identified as an Environmental Justice community (as discussed in Chapter 2 Environmental Justice). However, based on market research, there will be a sufficient number of single-family residence and commercial properties that are of equal to or better than the displacement properties available for rent or purchase according to the Draft Relocation Impact Statement (DRIS) prepared for this project. No new construction of replacement housing will be necessary; therefore, the impact would be less than significant with mitigation incorporated.

3.2.15. 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:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CEQA Significance Determinations for Public Services

a) No Impact

The build alternatives would not result in direct, long-term impacts on fire, police or other public facilities. 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 may improve response times of emergency services by improving traffic flow and reducing delay. Therefore, no impacts to public services are anticipated.

3.2.16. Recreation

	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CEQA Significance Determinations for Recreation

a) 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) No Impact

The proposed project does not include the construction of recreational facilities or require the creation of expanded recreational facilities; therefore, the project will have no impact on recreation.

3.2.17. Transportation

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CEQA Significance Determinations for Transportation

a) No Impact

This project is consistent with the circulation system of the local community plan. Transit, bicycle, and pedestrian facilities would be enhanced with the implementation of this project; therefore, no impacts are anticipated.

b) Less Than Significant with Mitigation Incorporated

In general, the build alternatives reduce VMT at 20 to 35 mph and increase VMT traveling at 40 to 55 mph, please see Chapter 2 (Traffic and Transportation/Pedestrian and Bicycle Facilities) and Chapter 3 (Climate Change) for more information.

The project will result in a slight increase in induced demand as shown in Table 3.2. Compared to existing (2018) conditions, horizon year (2044) conditions under Alternative 4 (No Build) would have 20 percent more VMT. With the improved travel time provided by two northbound lanes on SR 49 (Phase1) compared to the current configuration (Alternative 4/No Build), horizon year (2044) VMT is projected to increase (by an additional 0.3%) since some travelers would take advantage of the higher travel speeds on SR 49 and use a longer route to travel more quickly. The addition of the second southbound lane (Phase 2) would lead to an additional increase in VMT (by 0.6% over the No Build). Alternative 3, which has a median that will require out-of-direction travel along the corridor, would further increase VMT (by 0.8% over Alternative 4).

With the inclusion of the measures outlined in Table 3-1 (Regional and Local Greenhouse Gas Reduction Plans) in Chapter 3 (Climate Change), the project impacts are anticipated to be less than significant with mitigation incorporated.

c) No Impact

This project would not introduce any non-standard features or any other features which would cause unforeseen hazards or the facility to be inoperable for incompatible equipment, such as farm machinery, extra wide -load trucks, or military freight.

A traffic management plan (TMP) would be prepared as part of the project to provide controlled access through the work site during construction; therefore, no impacts are anticipated.

d) No Impact

A traffic management plan (TMP) would be prepared as part of the project to provide controlled access through the work site during construction. Measures outlined in the TMP would be taken to ensure that emergency services would not be delayed due to construction congestion and continuous access would be maintained. After the project is constructed, emergency service routes would be enhanced with a wider roadway, additional lanes for traffic control, and wider shoulders, which should improve travel times for emergency services; therefore, there would be no impact to emergency access.

3.2.18. 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:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CEQA Significance Determinations for Tribal Cultural Resources

a) and b) No Impact

As a result of consultation with Native American tribes and individuals, no Tribal Cultural Resources were identified within the APE for the proposed project. The Native American Heritage Commission (NAHC) was requested to review the Sacred Lands Files for any Native American sacred site within or adjacent to the project APE. The results indicated that there were no sacred sites listed in the section. A list of Native American groups and individuals that may have knowledge or concerns regarding cultural resources for the project area was also included by the NAHC. Correspondence was sent in June of 2016 and January of 2017 to all contacts provided by the NAHC. The initial correspondence was followed up by phone calls and/or emails.

The only response received was from the United Auburn Indian Community of the United Auburn Indian Rancheria (UAIC), who requested to be a consulting party on the project and identified an area of concern within the ADI at the Berriman Ranch. These were investigated as part of the studies completed and no Native American cultural materials were found, as reported on in the MCER, HPSR, and FOE. The UAIC subsequently had no concerns and the project would result in no impact to Tribal Cultural Resources.

3.2.19. Utilities and Service Systems

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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??	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CEQA Significance Determinations for Utilities and Service Systems

a) Less Than Significant

The project would re-locate and/or replace utilities as needed in such a manner to avoid environmental impacts.

b) No Impact

The proposed project would not require 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) No Impact

No wastewater would be generated by the project. No impact would occur.

d) Less Than Significant

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) No Impact

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

3.2.20. Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CEQA Significance Determinations for Wildfire

(a - d) No Impact

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. While the project area is close to the Local Responsibility Area and within the State Responsibility Area for Wildfire the project would not have an impact on wildfire due to the following reasons:

- Caltrans would develop a traffic management plan that would be consistent with local emergency and evacuation plans.
- The addition of wider shoulders, median and additional travel lanes would increase the width of the road as a firebreak and provide additional areas for emergency response vehicle staging.
- The project would reduce congestion and travel delay which would decrease emergency response time.

- The project would be constructed on the existing alignment and within a developed area with no new infrastructure development proposed.
- Due to the implementation of Caltrans' standard measures and best management practices, no impacts are anticipated due to drainage improvements.
- Traffic Management Systems, including Changeable Message Signs will provide critical information during an emergency and can be used to alert the public during times of high fire danger.
- Caltrans 2018 revised Standard Specification 7-1.02M(2) mandates fire prevention procedures during construction, including a fire prevention plan.

3.2.21. Mandatory Findings of Significance

	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CEQA Significance Determinations for Mandatory Findings of Significance

a) Less Than Significant

The proposed project does not have to potential to substantially degrade biological resources within the project area, as discussed in Chapter 2 (Biological Environment). Nor does it have the potential to eliminate important examples of California rich history, as disucssed in Chapter 2 (Cultural Resources). 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. Additionally, there are no observed occurrences of Federal or State listed special status plant species within the ESL; the Ponderosa Pine Forest (Natural Communities) within the porject limits would require some tree removal; however, given that this community is abundant within Nevada County, the removal of individual trees would not impact this abundant community; Biological surveys were conducted by qualified Caltrans' staff to assess impacts to Animal Species within the Biological Study Area (BSA). The only animlas the

project may effect are the resident populaition of Nevada County Deer; Biological surveys were conducted by qualified Caltrans' staff to assess impacts to Threatened and Endangered Species (TES) within the BSA. The only TES species the project may effect is the California Red-Legged Frog (CRLF); however, based on the results of surveys, analyses of habitat conditions and requirements, and current range of CRLF, it was determined that the project would have "no effect" on CRLF; 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. Based on the discussions above and in Chapter 2, less than significant impacts are anticipated.

b) No Impact

When project specific impacts were considered together with other past and future projects (Table S-1) in the area, the analysis concluded that the project did not have cumulative impacts.

c) Less Than Significant with Mitigation Incorporated

Implementation of the proposed project could result in impacts to the following resources as discussed in Chapter 2 (Noise), (Traffic and Transportation/Pedestrian and Bicycle Facilities), (Enviromental Justice) and Chapter 3 (Climate Change).

Construction noise will be short-term and no adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 14.8-02. For long-term operational noise, Caltrans intends to incorporate noise abatement in the form of a barrier.

In general, the build alternatives reduce VMT at 20 to 35 mph and increase VMT traveling at 40 to 55 mph. The project both reduces significant congestion and reduces travel times, but does not induce demand because the theory and use of travel time savings does not work when applied to rural state highways, as it over-estimates induced demand effects on rural capacity increasing projects. With the inclusion of the measures outlined in Table 3-1 (Regional and Local Greenhouse Gas Reduction Plans) in Chapter 3 (Climate Change), impacts are anticipated to be less than significant with mitigation.

Relocations will be required for the project; however, based on market research, there will be a sufficient number of replacement properties that are of equal to or better than the displacement properties available for rent or purchase according to the Draft Relocation Impact Statement (DRIS) prepared for this project. All displacements will be in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and the California Relocation Act.

For the above stated reasons, and with the inclusion of the measures outlined in the referenced sections, the project impacts are anticipated to be less than significant with mitigation incorporated; therefore, the project does not have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly. Impacts are less than significant with mitigation incorporated.

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

The Nevada County Hazard Mitigation Plan 2017 determined likelihood of future occurrence of wildfire in Nevada County as highly likely and classified the hazard risk as a priority hazard for the Nevada County Planning Area. Compounded by current drought conditions, the wildfire hazard in Nevada County has substantially increased and is no longer just a seasonal issue. The wildfire season, including the potential for a catastrophic wildfire, is now a year around concern. The vulnerability of Nevada County to increased occurrence of a devastating wildfire has increased as exacerbated by the recent drought, increases in tree mortality, and overall increase in wildfire conditions.

From May to October of each year, Nevada County faces a serious wildland fire threat. Fires will continue to occur on an annual basis in the Nevada County Planning Area. The threat of wildfire and potential losses are constantly increasing as human development and population increase and the Nevada County 4-141 Local Hazard Mitigation Plan Update August 2017 wildland urban interface areas expand. Due to its high fuel load and long, dry summers, most of Nevada County continues to be at risk from wildfire. When fire does return to the dense, dry forests of Nevada County, they are more likely to burn uncharacteristically, at moderate and high intensity, rather than the historic low intensity level.

The increased fuel accumulation results in greater flame lengths, more crown fires and greater resistance to control. Tree mortality is often high, even for the fire-resistant ponderosa pine and large Douglas firs. Soils, understory vegetation, and wildlife populations, which evolved with low intensity fires, are at risk of long-term damage from uncharacteristic fire intensity. Climate Change and Wildfire Warmer temperatures can exacerbate drought conditions. Drought often kills plants and trees, which serve as fuel for wildfires. Warmer temperatures could increase the number of wildfires and pest outbreaks, such as the western pine beetle. Cal-Adapt’s wildfire tool predicts the potential increase in the amount of burned areas for the year 2085, as compared to current (2010) conditions. Based on this model, Cal-Adapt predicts that wildfire risk in Nevada County will increase slightly in the near term, and subside during mid-to late century. However, wildfire models can vary depending on the parameters used. Cal-Adapt does

not take landscape and fuel sources into account in their model. In all likelihood, in Nevada County, precipitation patterns, high levels of heat, topography, and fuel load will determine the frequency and intensity of future wildfire.

CalFire’s Fire Hazard Severity Zone mapping tool (<https://egis.fire.ca.gov/FHSZ/>) shows the project traverses high and very high fire hazard severity zones and is close to the Local Responsibility Area and within the State Responsibility Area for Wildfire (see Table 3-1)

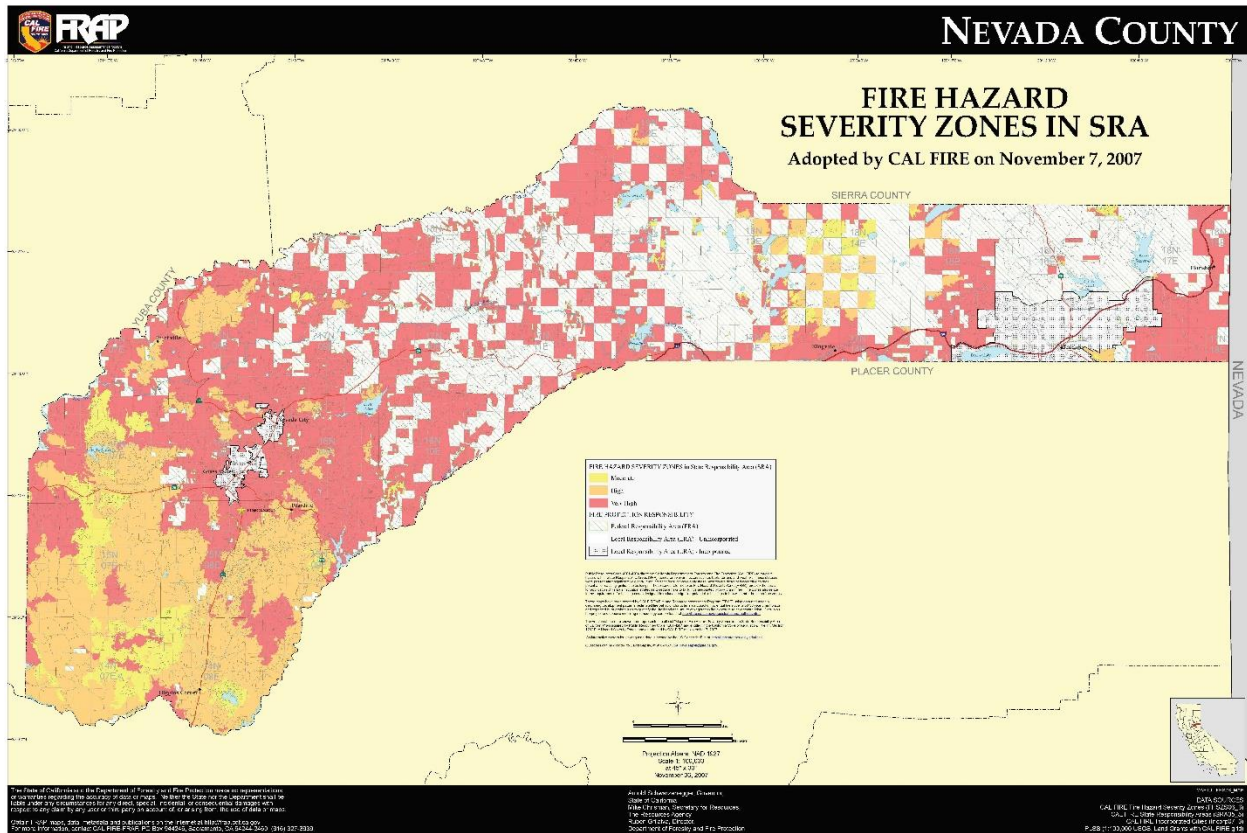


Figure 3-1. Fire Hazard Severity Zones in State Responsibility Area

The extent and intensity of wildfires increase as temperatures rise, and warming is one of the primary projected impacts of climate change. The National Oceanic and Atmospheric Administration’s Fourth National Climate Assessment, released in 2018, reported that climate change factors alone roughly doubled the area burned by wildfire in the western United States between 1984 and 2015. Nevada County has been affected by several wildfires in recent years, such as the Jones Fire in 2020 near Grass Valley. Warming and drying trends in Nevada County as a result of climate change are projected to increase the frequency and severity of wildfires in Nevada County. Increasing wildfires are likely to lead to more transportation disruptions, affecting access to local communities, commerce, tourism and other essential functions throughout the Nevada County (Dettinger, 2018). These effects could be particularly acute near bottle necks in the transportation system, such as highways through forested areas and other principal arterials in high risk wildfire areas.

In Nevada County, 92 percent of County residents live within high fire severity zones (Nevada County OES, 2020). Many wildfires occur in rural areas, which often have more low-income households than the state average, and disproportionately affect disadvantaged and low-income communities. Older adult residents and those with disabilities may be unable to quickly evacuate themselves during a wildfire, requiring them to receive additional assistance. Funding transportation improvements to ensure that these households can be effectively evacuated when wildfires threaten them, as well as providing resources for recovery in these areas afterwards, is a challenge to government agencies in Nevada County at all levels.

Environmental Consequences

The project segment of SR 49 is located within a CAL FIRE Very High Fire Hazard Severity Zone. The construction of the planned improvements to SR 49 will make this segment of SR 49 more resilient to the risk of wildfire by reducing roadside vegetation fuel loads and providing capacity to handle evacuation events and allow contra flow lane management to facilitate evacuation egress and the ingress of emergency responders. The additional roadway width will create additional distance between the forested tree canopy that currently overhangs the highway in several segments of the corridor. Through the removal of the existing lane-drops at the merge points that the northern and southern project limits existing design features that would constrict traffic flow in the event of evacuation will be eliminated. Local residents continue to express both safety and evacuation concerns and the desire to have the SR 49 corridor improved. For the recent Jones Fire (2020) in Nevada County that threatened the incorporated cities of Nevada City and portions of Grass Valley, which were under evacuation warning, SR 49 would have been a primary evacuation route. The existing merge sections and lane drops at the southern and northern project limits create bottle necks and congestion during peak travel periods that have resulted in rear end and sideswipe accidents and will constrict the flow of traffic in the event of an evacuation.

While the project area is close to the Local Responsibility Area and within the State Responsibility Area for Wildfire the project would not have an impact on wildfire due to the following reasons:

- During construction, Caltrans would develop a traffic management plan that would be consistent with local emergency and evacuation plans.
- The addition of wider shoulders, median and additional travel lanes would increase the width of the road as a firebreak and provide additional areas for emergency response vehicle staging.
- The project would reduce congestion and travel delay which would decrease emergency response time.

- The project would be constructed on the existing alignment and within a developed area with no new infrastructure development proposed.
- Due to the implementation of Caltrans' standard measures and best management practices, no impacts are anticipated due to drainage improvements.
- Traffic Management Systems, including Changeable Message Signs will provide critical information during an emergency and can be used to alert the public during times of high fire danger.
- Caltrans 2018 revised Standard Specification 7-1.02M(2) mandates fire prevention procedures during construction, including a fire prevention plan.

Avoidance, Minimization, and/or Mitigation Measures

None required.

References

"Welcome to Fire Hazard Severity Zones Maps (ca.gov).", California Department of Forestry and Fire, <https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps>

"FHSZ Viewer." California Department of Forestry and Fire, <https://egis.fire.ca.gov/FHSZ/>

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 (CO₂), methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF₆), and various hydrofluorocarbons (HFCs). CO₂ 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 CO₂.

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 (MMT_{CO₂e}).⁸ 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.

⁸ GHGs differ in how much heat each trap in the atmosphere (global warming potential, or GWP). CO₂ is the most important GHG, so amounts of other gases are expressed relative to CO₂, using a metric called "carbon dioxide equivalent" (CO₂e). The global warming potential of CO₂ is assigned a value of 1, and the GWP of other gases is assessed as multiples of CO₂.

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.

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 outside an urban area with land uses consisting of Caltrans’ right-of-way (ROW), surrounding commercial and residential areas, and forested slopes. The scope of this project is encompassed by Segment 11 (NEV PM 0.00/R14.475) of the Transportation Concept Report (TCR) which is a 14.48 mile stretch of two- and four-lane conventional highway beginning at the Placer/Nevada County line and continuing north to the SR-20 junction in Grass Valley. This segment is a major roadway connecting Grass Valley and Nevada City with I-80 in Auburn to the south. It is the lifeline for much of Nevada County’s freight and lumber traffic and provides access to recreational attractions. This segment of SR-49 experiences AM and PM Peak Hour congestion and is currently operating at LOS E. The SR 49 corridor is identified in

the Caltrans California Freight Mobility Plan as a Tier 3 freight facility on the Highway Freight Network and is designated as a terminal access route for Surface Transportation Assistance Act (STAA) trucks. *The 2015 Caltrans District 3 Goods Movement Study* identifies SR 49 as having a high deficiency for goods movement mobility in the base year, and in the no-build forecast.

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 CO₂, CH₄, N₂O, HFCs, perfluorocarbons, SF₆, and nitrogen trifluoride. It also accounts for emissions of CO₂ that are removed from the atmosphere by “sinks” such as forests, vegetation, and soils that uptake and store CO₂ (carbon sequestration). The 1990–2016 inventory found that of 6,511 MMTCO₂e GHG emissions in 2016, 81% consist of CO₂, 10% are CH₄, and 6% are N₂O; the balance consists of fluorinated gases (U.S. EPA 2018). In 2016, GHG emissions from the transportation sector accounted for nearly 28.5% of U.S. GHG emissions.

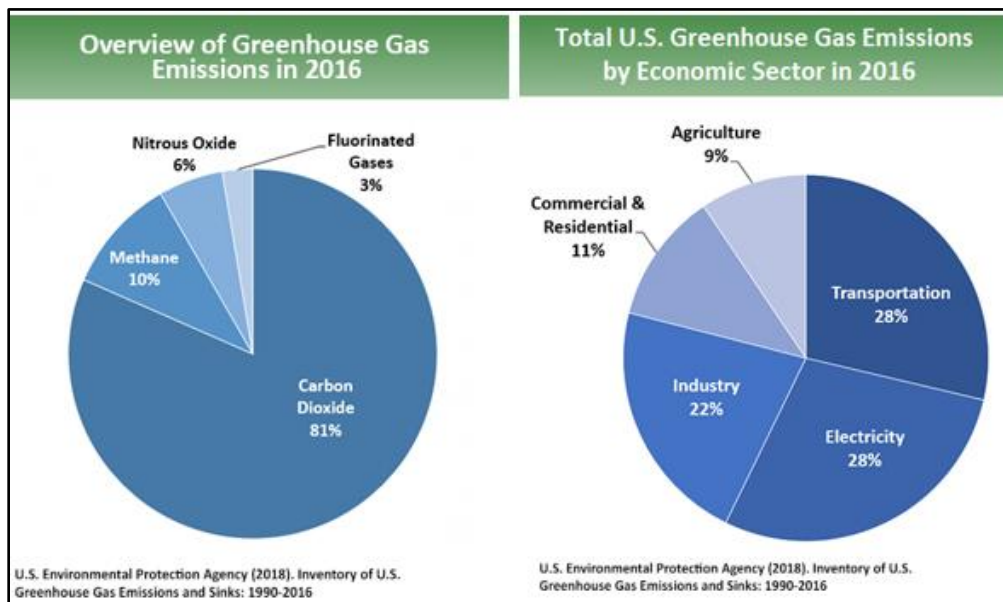


Figure 3-2. U.S. 2016 Greenhouse Gas Emissions

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 MMTCO₂e 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).

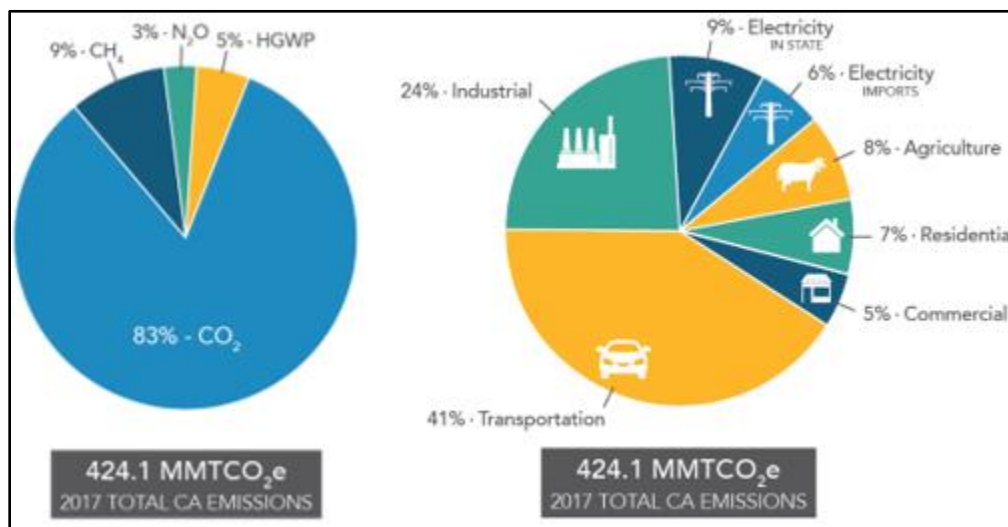


Figure 3-3. California 2017 Greenhouse Gas Emissions

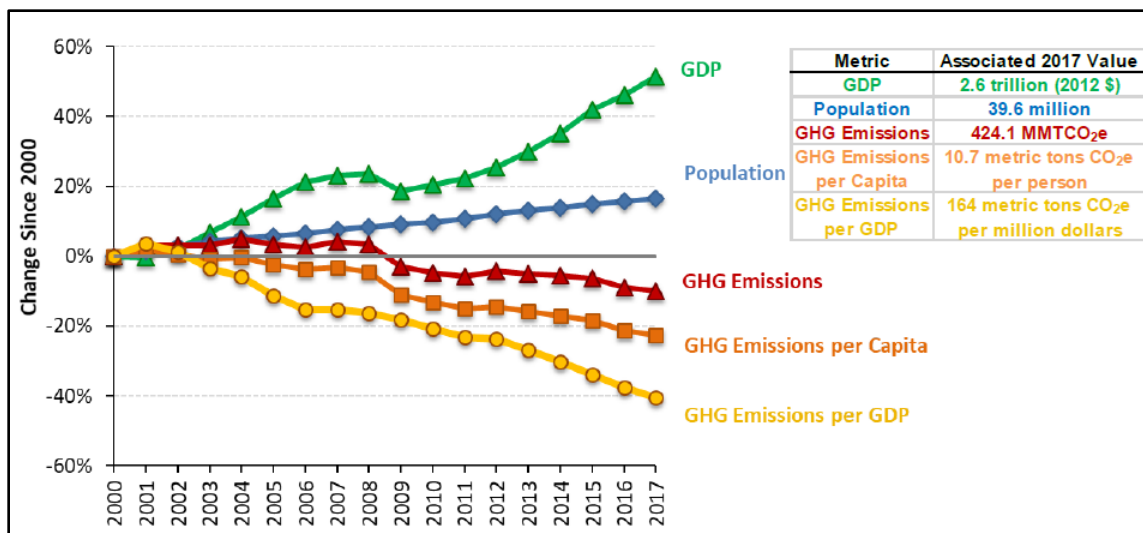


Figure 3-4. Change in California GDP, Population, and GHG Emissions since 2000
(Source: ARB 2019b)

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

The Air Resources Board 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 within the jurisdiction of the Nevada County Transportation Commission. NCTC's target to achieve a 2.5% reduction of GHG emissions per year over the twenty-year planning period (50 percent). Nevada County Regional Transportation Plan (2015-2035) identifies the following GHG Reduction objectives.

Table 3-1. Regional and Local Greenhouse Gas Reduction Plans

Title	GHG Reduction Policies or Strategies
<p>Nevada County Regional Transportation Plan 2015-2035 (Adopted January 2018)</p>	<ul style="list-style-type: none"> • Objective 2.A Reduce dependence on automobile by emphasizing transit, ridesharing, working from home, and pedestrian and bicycle travel (Target Reduce % Drive Alone from 76% baseline to 71% and increase other modes from baseline of 24% up to 26%) • Objective 2.B Create bicycle, pedestrian, and transit networks that provide access and connections to between key destinations, including schools and commercial centers (Target 2% increase/yr. of the planned sidewalk network completed, planned bicycle network completed, and number of transit boardings) • Policy 2.3 Maintain and improve general public transportation services within Grass Valley and between Grass Valley and Nevada City • Policy 2.5 Support the funding of operational improvements, maintenance, and modernization of public transit services and facilities • Policy 2.6 Encourage transit services along the SR 49 corridor as recommended in the SR 49 Corridor System Management Plan • Policy 2.7 Develop connections between the eastern and western County and usable commuter services to neighboring regions by expanding and connecting transit and rail networks • Policy 2.10 Encourage jurisdictions to consider proximity to transit and multi-modal facilities when siting educational, social service, and major employment and commercial facilities • Policy 2.11 Encourage completion of existing non-motorized transportation systems and facilities (including bikeways and sidewalks), with an emphasis on connectivity and safety • Policy 2.12 Encourage improved pedestrian facilities in high-density areas • Objective 3B Reduce regional emissions of criteria pollutants and greenhouse gases (Target 2.5% reduction/yr.) • Policy 3.7 Support continued expansion of electric vehicle charging station networks • Policy 3.8 Encourage the use of alternative fuels and electric vehicles • Policy 3.10 Support the use of reflective aggregate where feasible to reduce heat absorption and greenhouse gases

3.5. 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 CO₂, CH₄, N₂O, and HFCs. CO₂ emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of CH₄ and N₂O 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

ARB developed the Emission FACtors (EMFAC) model to facilitate preparation of statewide and regional mobile source emissions inventories. The model generates emissions rates that can be multiplied by vehicle activity data from all motor vehicles, including passenger cars to heavy-duty trucks, operating on highways, freeways, and local roads in California. Caltrans’ CT-EMFAC model uses data derived from EMFAC to streamline project-level emissions analyses. Caltrans recommends using the CT-EMFAC model for quantifying mobile source emissions from transportation projects on the California State Highway System. The EMFAC2017/CT-EMFAC2017 model has been approved by U.S. EPA and meets the FHWA’s transportation planning requirements.

CO₂ accounts for 95 percent of transportation GHG emissions in the U.S. The largest sources of transportation-related GHG emissions are passenger cars and light-duty trucks, including sport utility vehicles, pickup trucks, and minivans. These sources account for over half of the emissions from the sector. The remainder of GHG emissions comes from other modes of transportation, including freight trucks, commercial aircraft, ships, boats, and trains, as well as pipelines and lubricants. Because CO₂ emissions represent the greatest percentage of GHG emissions it has been selected as a proxy within the following analysis for potential climate change impacts generally expected to occur.

The highest levels of CO₂ from mobile sources such as automobiles occur at stop-and-go speeds (0–25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0–25 miles per hour (see **Figure 3-5**). To the extent that a project relieves congestion by enhancing operations and improving travel times in high-congestion travel corridors, GHG emissions, particularly CO₂, may be reduced.

Four primary strategies can reduce GHG emissions from transportation sources: (1) improving the transportation system and operational efficiencies, (2) reducing travel activity, (3) transitioning to lower GHG-emitting fuels, and (4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued concurrently.

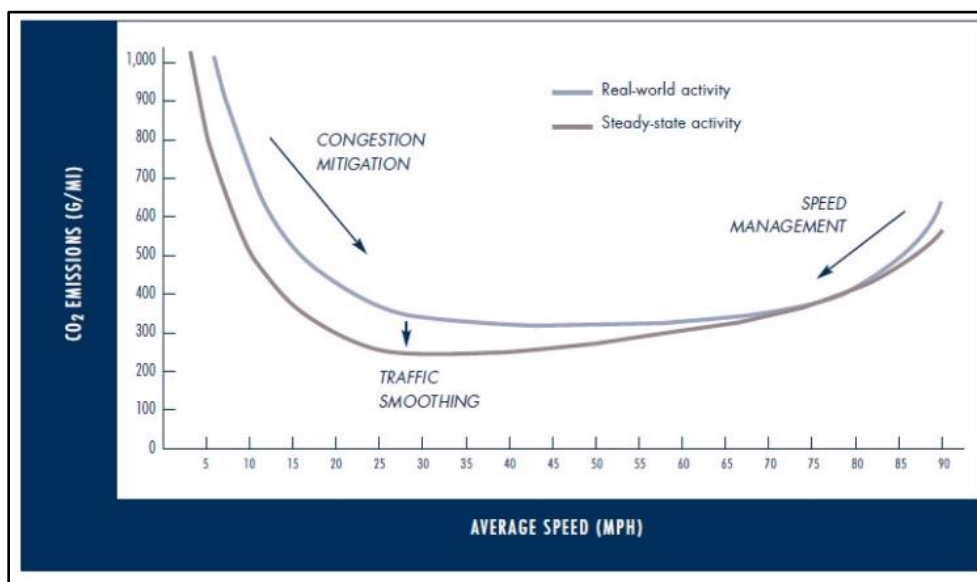


Figure 3-5. Possible Use of Traffic Operation Strategies in Reducing On-road CO₂ Emissions (Source: Barth and Boriboonsomsin 2010)

While EMFAC has a rigorous scientific foundation and has been vetted through multiple stakeholder reviews, its GHG emission rates are based on tailpipe emission test data.⁹ Moreover, the model does not account for factors such as the rate of acceleration and vehicle aerodynamics, which influence the amount of emissions generated by a vehicle. GHG emissions quantified using EMFAC are therefore estimates and may not reflect actual physical emissions. Though EMFAC is currently the best available tool for calculating GHG emissions

⁹ This analysis does not currently account for the effects of the U.S. National Highway Traffic Safety Administration and Environmental Protection Agency SAFE (Safer Affordable Fuel-Efficient) Vehicles Rule. Part One revoking California’s authority to set its own greenhouse gas emissions standards was published on September 27, 2019 and effective November 26, 2019. The SAFE Vehicles Rule Part Two became effective June 30, 2020. It amends existing Corporate Average Fuel Economy (CAFE) and tailpipe carbon dioxide emissions standards for passenger cars and light trucks and establishes new standards covering model years 2021 through 2026. The proposal would retain the model year 2020 standards for both programs through model year 2026. Although this analysis does not incorporate adjustment factors for greenhouse gas emissions based on the SAFE Rule, modeling these estimates with EMFAC2017 or CT-EMFAC2017 remains the most precise means of estimating future greenhouse gas emissions.

from mobile sources, it is important to note that the GHG results are only useful for a comparison among alternatives.

The proposed project is located south of the City of Grass Valley in Nevada County and is included in the NCTC's RTP. NCTC's target to achieve a 2.5% reduction of GHG emissions per year over the twenty-year planning period (50 percent) is consistent with the goals of Executive Order B-30-15 and other state and federal regulations. More efficient vehicles and low-carbon fuel efforts being pursued at the state level would likely afford the greatest reduction in rural GHG emissions. NCTC would continue to support these efforts, including the expansion of electric vehicle charging stations within Nevada County. For example, ChargePoint, a charging station network provider, has been awarded grants from the California Energy Commission to install five DC fast charging stations in the I-80 corridor, including two stations in the SR 49 corridor between Auburn and Grass Valley. The low-density nature of most Nevada County development creates challenges for meeting access and mobility needs with non-automotive modes. As with most rural counties, alternative modes are limited in Nevada County and are not seen as a significant replacement to the automobile for economic, mobility, and geographic reasons. These factors and funding challenges similarly limit the availability of transit within Nevada County. Additionally, walking and bicycling are more difficult in many areas of the county due to hilly topography. NCTC would continue to support transit, pedestrian, and bicycle transportation of the NCTC RTP Action Element. The proposed project would support efforts by improving shoulders to accommodate a Class III bicycle facility.

Quantitative Analysis

Methodology

The study area on SR 49 from La Barr Meadows Road to Crestview Drive is in Nevada County. For the TAR, the base year Nevada County Transportation Commission (NCTC) model was calibrated and validated to observed AM and PM peak hour volumes at the study intersections by adjusting roadway network and traffic analysis zone connections. Similar changes were made to the cumulative year 2035 model.

OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA provides a method to estimate induced travel (VMT) from a roadway capacity increasing project, but it notes that the method may not be suitable for rural locations "which are neither congested nor projected to become congested." Given that the SR 49 study area is primarily rural, the VMT estimates presented here are calculated directly from the travel demand forecast model.

Using the project's travel demand forecast model, VMT was measured for the project alternatives over the entire model area, which is Nevada County east of the Sierra Nevada crest. In addition to estimating the total, VMT was also classified into 5-mph speed bins. The model estimate of VMT is limited by the model extent. Vehicles traveling through the study area

into neighboring counties will have VMT that occurs outside of the model. Since the speed that this external VMT would be traveling at is unknown, the VMT is excluded from this analysis.

The travel demand forecast model has a base year of 2012 and a cumulative year of 2035. The base year (2012) VMT estimate was used directly as the existing year (2018) VMT estimate since the base year (2012) model was calibrated and validated to volumes in the study corridor. The opening year (2024) and horizon year (2044) VMT and VMT by speed bin estimates were interpolated and extrapolated from the existing (2018) and cumulative (2035) estimates.

GHG emissions are calculated from two sources. The first uses the travel demand forecasting model to calculate daily VMT over the four model periods (AM, midday, PM, and overnight) by 5-mph speed bin. Then, the EMFAC 2017 emissions factors from the California Air Resources Board (CARB) are applied to estimate GHG emissions. The forecast model estimates speed at the link level, so it cannot account for intersection-level congestion delay.

To account for the GHG emissions due to peak hour congestion, vehicle fuel consumption estimates are used as the second source. The Synchro capacity analysis model provides fuel consumption estimates based on factors developed for the Transyt7F model in the 1990s. Unlike EMFAC 2017, fuel consumption factors are the same for the existing (2018), opening (2024), and horizon (2044) years. Fuel use is then converted to GHG based on the carbon content of gasoline, which is 19.6 pounds of carbon dioxide per gallon for gasoline (US Energy Information Administration, 2016). With the addition of ethanol to gasoline, the carbon dioxide production decreases. Although other GHGs are produced from fuel combustion, carbon dioxide is the overwhelming majority (see Table 3.3 below) so it is used as a reasonable approximation of the total GHG.

VMT Estimates

Table 3-2 presents the model area daily VMT under the analysis scenarios. Compared to existing (2018) conditions, horizon year (2044) conditions under Alternative 4 (No Build) would have 20 percent more VMT. With the improved travel time provided by two northbound lanes on SR 49 (Alternative 1) compared to the current configuration (Alternative 4), horizon year (2044) VMT is projected to increase (by an additional 0.3%) since some travelers would take advantage of the higher travel speeds on SR 49 and use a longer route to travel more quickly. The addition of the second southbound lane (Alternative 2) would lead to an additional increase in VMT (by 0.6% over Alternative 4). Alternative 3, which has a median that will require out-of-direction travel along the corridor, would further increase VMT (by 0.8% over Alternative 4).

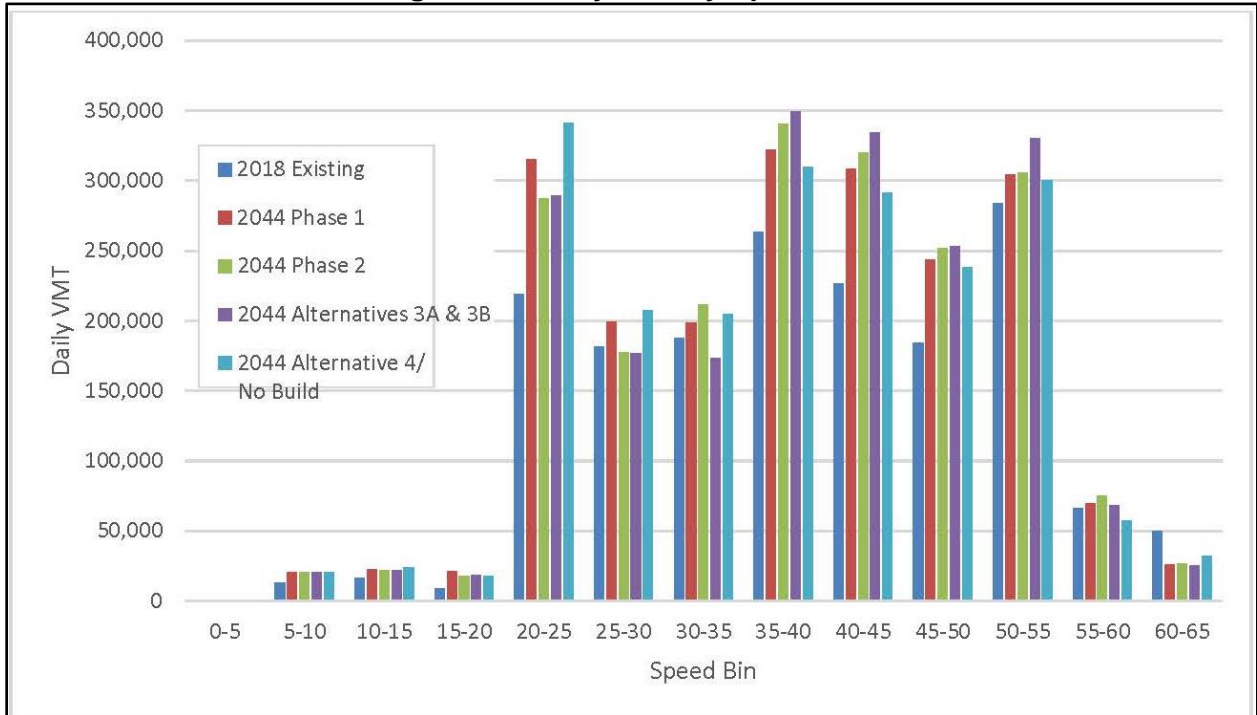
Table 3-2. Daily VMT

Analysis Year	Configuration				
	Existing	Phase 1 (2 NB Lanes)	Phase 2 (4 Lanes)	Alternative 3A & 3B (4 Lanes with Median)	Alternative 4 (No Build)
Existing (2018)	1,700,466	-	-	-	-
Opening (2024)	-	1,781,280	1,782,543	1,783,611	1,779,849
Horizon (2044)	-	2,050,660	2,056,135	2,060,762	2,044,457

Source: Fehr & Peers (2020)

Figure 3-6 shows the daily VMT by speed bin for the existing year (2018) and the project alternatives under the horizon year (2044). The no build alternative (Alternative 4) would have more travel occurring in the lower speed ranges (20 to 35 mph) than the build alternatives. The four-lane alternative with median (Alternative 3) would have more travel occurring in the higher speed ranges (50 to 65 mph speed bins). These differences reflect the effect of widening SR 49 in the study area.

Figure 3-6. Daily VMT by Speed Bin



GHG Estimates

The CARB EMFAC2017 Web Database (<https://www.arb.ca.gov/emfac/2017/>) was used to estimate pollutant emissions for the project alternatives based on the VMT by speed bin values. Error! Reference source not found. lists the daily pollutant emissions for existing year (2018) and the project alternatives under opening (2024) and horizon year (2044) conditions. Despite the increase in VMT under the future years, pollutant emissions are the same or lower than existing conditions due to expected improvements in the vehicle fleet (i.e., improved fuel efficiency and an increase in alternative fuel vehicles).

Table 3-3. Daily Pollutant Emissions

Pollutant	Existing (2018)	Opening (2024)				Horizon (2044)			
		Phase 1	Phase 2	Alt 3A & 3B	Alt 4/No Build	Phase 1	Phase 2	Alt 3A & 3B	Alt 4/No Build
ROG	0.32	0.16	0.16	0.16	0.16	0.09	0.09	0.09	0.09
TOG	0.40	0.21	0.21	0.21	0.21	0.11	0.11	0.11	0.12
CO	7.17	4.12	4.12	4.11	4.12	2.66	2.65	2.65	2.67
NO _x	2.67	1.51	1.49	1.49	1.51	0.92	0.89	0.89	0.94
SO _x	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
CO ₂	1,628.43	1,468.03	1,465.21	1,465.72	1,469.56	1,322.01	1,311.93	1,313.59	1,327.48
CH ₄	0.05	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02
PM ₁₀	0.04	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01
PM _{2.5}	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
N ₂ O	0.11	0.08	0.08	0.08	0.08	0.07	0.06	0.06	0.07
GHG ¹	1,628.59	1,468.14	1,465.32	1,465.83	1,469.67	1,322.09	1,312.01	1,313.67	1,327.56

Notes: Emissions are reported in tons per day. 1 ton equals 0.9072 metric tons.
 1. GHG is the sum of CO₂, CH₄ and N₂O.

Source: EMFAC2017 (CARB, 2017), Fehr & Peers (2020)

Table 3-4 lists the AM and PM peak hour fuel consumption and GHG emissions for the study area. Fuel consumption reflects vehicle volumes and operations in the study area. In general, volumes and congestion levels are higher during the PM peak hour, so the GHG emissions are higher also. Phases 1, 2, and Alternative 4/No Build all have generally low delays, so the higher demand volumes for Phases 1 and 2 lead to higher GHG emissions. For Alternative 3B (roundabouts) and 3A (signals), the addition of the two controlled intersections causes more delay for through vehicles on SR 49. As a result, these alternatives would have the highest GHG emissions based on peak hour operations.

Table 3-4: Peak Hour GHG Emissions

Analysis Year	Configuration	Fuel Consumption (gallons)		GHG Emissions (tons)	
		AM	PM	AM	PM
Existing (2018)		219	249	2.15	2.44
Opening (2024)	Phase 1	238	276	2.33	2.70
	Phase 2	237	277	2.32	2.71
	Alternative 3A	316	372	3.10	3.65
	Alternative 3B	260	312	2.55	3.06
	Alternative 4/No Build	229	262	2.24	2.57
Horizon (2044)	Phase 1	294	313	2.88	3.07
	Phase 2	297	370	2.91	3.63
	Alternative 3A	404	499	3.96	4.89
	Alternative 3B	334	408	3.27	4.00
	Alternative 4/No Build	249	283	2.44	2.77

Note: One gallon of fuel is assumed to produce 19.6 pounds of GHGs.
Source: Fehr & Peers (2020)

Annual GHG emissions were estimated from two sources. The travel demand model was used to produce estimates of daily VMT by speed bin. GHG emissions were then estimated based on factors from EMFAC2017. The second source was fuel consumption estimates from the AM and PM peak hour intersection capacity analysis model. GHG emissions were calculated based on the carbon content on gasoline.

Table 3-5 compares VMT and GHG emissions on an annual basis for existing year (2018) and the project alternatives under the opening (2024) and horizon (2044) years. To convert the daily VMT and GHG emissions to an annual basis, a conversion factor of 300 was used. The straight conversion of 365 days per year is not appropriate since traffic volumes on weekends and holidays are lower than a typical weekday that is represented in the travel demand model. A review of 2017 count data in the PeMS database for mainline and ramp locations on Interstate 80 in Roseville found that the conversion factor for the average weekday to annual volume

ranged from 242 to 344. So, 300 was selected as a reasonable estimate to convert daily to annual values.

Table 3-5. Annual VMT and GHG Emissions Comparison

Analysis Year	Configuration	Annual VMT	GHG Emissions (tons per year)
Existing (2018)		510,139,800	489,953
Opening (2024)	Phase 1	534,384,000	441,954
	Phase 2	534,762,900	441,106
	Alternative 3A	535,083,300	441,771
	Alternative 3B	535,083,300	441,430
	Alternative 4/No Build	533,954,700	442,345
Horizon (2044)	Phase 1	615,198,000	398,412
	Phase 2	616,840,500	395,564
	Alternative 3A	618,228,600	396,756
	Alternative 3B	618,228,600	396,282
	Alternative 4/No Build	613,337,100	399,832

Source: EMFAC2017 (CARB, 2017), Fehr & Peers (2019)

Compared to existing year (2018), GHG emissions are expected to be more than **90,000 tons per year lower** under Alternative 4 (No Build) during the horizon year (2044) due to changes in fuel efficiency. Under horizon year (2044) conditions, annual VMT would increase with the build alternatives compared to the no build alternative, but the annual GHG emissions would decrease due to changes in network vehicle speeds. That is, more VMT would occur at speeds where GHG emissions are lower. Adding a second northbound lane on SR 49 (Phase 1) would decrease annual GHG emissions by about 1,400 tons per year compared to Alternative 4/No Build. The addition of both northbound and southbound lanes (Phase 2) would reduce GHG emissions by about 4,200 tons per year, three times higher than the reduction with Phase 1. For Alternative 3, changes in GHG emissions due to daily VMT changes would be offset by higher peak hour GHG emissions, which would result in an **overall GHG emissions reduction** of 3,000 tons per year with signals (Alternative 3A) and 3,550 tons per year with roundabouts (Alternative 3B).

Planning Vision for Reducing Vehicle Miles Traveled in the SR 49 Corridor

The Nevada County Transportation Commission (NCTC) in coordination with Nevada County, the Placer County Transportation Planning Agency (PCTPA), and Caltrans District 3 continue to analyze opportunities to reduce Vehicle Miles Traveled within the SR 49 corridor. The short, medium, and long-term actions being analyzed and considered for implementation in the SR 49 corridor to reduce VMT include, but are not limited to:

Short-term:

- Service enhancements to the Gold Country Connects (formerly Gold Country Stage) Route 5 fixed route express transit service (operated by Nevada County, Monday - Friday) to provide schedule modifications to align the interregional connections to the 5:40 AM Amtrak Capital Corridor Inner-City Passenger Rail train departure and Amtrak connecting buses, as well as Placer County Transit, at the Auburn Conheim Multimodal Station. The Capitol Corridor passenger rail service is managed by the Capitol Corridor Joint Powers Authority (CCJPA) provides a critical link to the Sacramento mega region and the San Francisco Bay Area.
- Planning and implementation of bicycle and pedestrian improvements identified in the Nevada County Active Transportation Plan both within and adjacent to the SR 49 corridor to provide eliminate gaps and provide safe and continuous network of facilities.
- Support of Nevada County's efforts to identify areas for expansion of broadband internet services to support the increasing shift to telecommuting.
- Support for expansion of Zero Emission Vehicle (ZEV) infrastructure within the SR 49 corridor in both Nevada and Placer County.
- Support and encourage smart growth principles for land use projects that can reduce the need for vehicle trips and make it easy for people to walk, bike, and access transit.
- Preparation of the Project Initiation Document for the next phase of multi-modal improvements in the SR 49 corridor in the vicinity of Alta Sierra Drive.
- NCTC intends to conduct a planning effort in coordination with the Governor's Office of Planning and Research to analyze rural induced demand on previously completed transportation improvement projects within Nevada County. This effort will also analyze VMT mitigation options and quantification methods.

Medium-term:

- Conduct planning studies on implementation of ZEV/Micro-transit feeder services to the Gold Country Connects Route 5 fixed route service in the residential communities of Alta Sierra and Lake of the Pines that are adjacent to the SR 49 corridor in Nevada County.
- Planning and coordination with Caltrans District 3 to upgrade the pedestrian activated crossing devices/infrastructure at signalized intersections along the SR 49 corridor to allow for tracking pedestrian and bicycle activity and performance measurement.

- Pursue Federal Transit Administration 5311 (f) intercity transit funding for commuter bus service to connections to the Roseville/Sacramento and Yuba City/Marysville in coordination with PCTPA and Yuba Sutter Transit.
- The implementation of the planned Sac-Roseville Phase 1 triple track project Phase I project will allow the Capitol Corridor to operate three round trips (6 trains) daily between Sacramento and Roseville versus the one round trip currently offered. It is anticipated that additional Amtrack bus connections to the Auburn Conheim Multimodal Station will be added. This will provide an opportunity for additional coordinated interregional connections to the Gold Country Connects (formerly Gold Country Stage) Route 5 fixed route express transit service.
- Review and analysis of the existing Park-n-Ride facilities at SR 49/Wolf Road and the SR 20/49/174 to identify possible enhancements including ZEV infrastructure to promote increased utilization.
- Implement operational and safety improvements identified in the SR 49 Comprehensive Multi-Modal Corridor Plan (CMCP) including the addition of 10' shoulders for bicyclists and pedestrians.

Long-term:

- The Capitol Corridor expects to implement the remainder of the Sac-Roseville Phase 1 triple track project, for a total of 10 roundtrips (20 trains daily) between Sacramento and Roseville, as soon as funding is available. This will provide an opportunity to align the Gold Country Connects Route 5 fixed route express transit service to new Amtrack connector bus scheduled connections at the Auburn Conheim Multimodal Station. Third track project improvements are projected to reduce vehicle miles traveled by nearly 12 million throughout Northern California.
- Work with the Capitol Corridor Joint Powers Authority to explore additional Capitol Corridor round trip service to the Auburn Conheim Multimodal Station.
- The Nevada County Transportation Commission and Placer County Transportation Agency also support the future planned expansion of the Amtrack Capital Corridor Inner-City Passenger Rail service to Truckee/Lake Tahoe/Reno. If implemented transit connections via Gold Country Connects Route 5 will be planned. This Capitol Corridor expansion is a key component to the Truckee/North Tahoe Transportation Management Association's (TNT-TMA) North Lake Tahoe Resort Triangle Transit Vision, which focuses on getting visitors to Truckee/North Lake Tahoe to the region without a vehicle and providing alternative mobility options to move around the region without a vehicle.

Summary

Compared to existing conditions, GHG emissions will decrease by opening (2024) and horizon (2044) year conditions for all project phases/alternatives due to planned improvements in fuel efficiency and anticipated changes to alternate fuels (such as, electric vehicles). Under horizon year (2044) conditions, the build phases/alternatives would have less GHG emissions than Alternative 4/No Build based on increased speeds on network links.

EMFAC2017 emissions factors were used to develop GHG emissions estimates for the alternatives. The emissions factors do not include off-model adjustment factors to account for the SAFE Vehicles Rule Part One from the US EPA and NHTSA.

In general, the build alternatives reduce VMT at 20 to 35 mph and increase VMT traveling at 40 to 55 mph. These increases will be off-set by implementing the short-, medium- and long-term measures above and in Table 3-1 (Regional and Local Greenhouse Gas Reduction Plans).

Construction Emissions

Construction GHG emissions would result from material processing, on-site construction equipment, and traffic delays due to construction. These emissions would 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-CET2018 (version 1.3). The emissions presented are based on the best information available at the time of calculations. Project construction is estimated to generate 2,482 tons of CO₂ over the 375 estimated working days.

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. In addition, Caltrans will prepare and implement a TMP to avoid and minimize GHG emissions caused by potential traffic delays during construction.

CEQA Conclusion

The project is an operational and mobility improvement project. However, due to anticipated improvements in vehicle fuel efficiency, alternative fuels and the project's operational improvements that would allow more vehicles to travel at more fuel-efficient speeds, CO₂ emissions would decrease under either build alternative 3A or 3B compared to existing conditions; therefore, the project does not result in increased GHG emissions.

The project would not conflict with Nevada County's or any other plan, policy, or regulation to reduce GHG emissions. With implementation of construction GHG reduction measures, the impact would be less than significant.

3.6. 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.

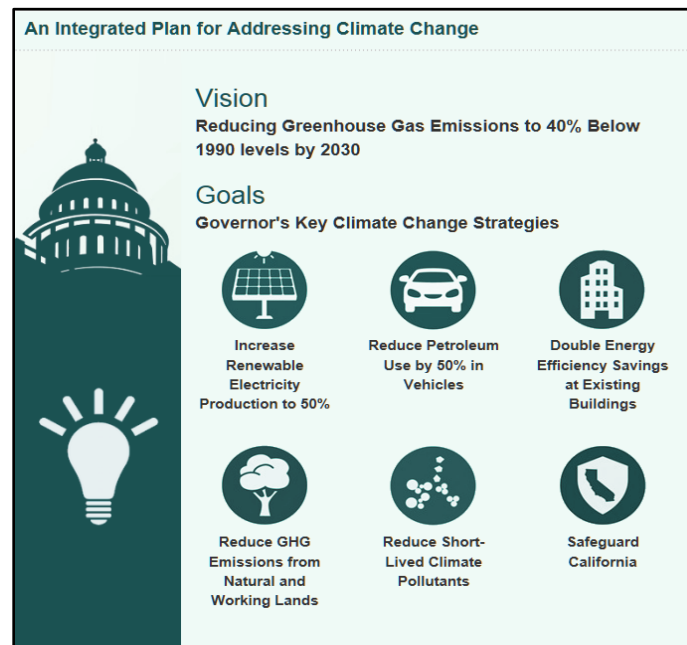


Figure 3-7. California Climate Strategy

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 greenhouse gas 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 CO₂ 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 would 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 would also be implemented in the project to reduce GHG emissions and potential climate change impacts from the project.

Short -Term (Construction)

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 would be properly tuned and maintained. All construction equipment would use low sulfur fuel as required by CA Code of Regulations Title 17, Section 93114.
- Construction traffic would be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

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 would 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.

According to the California Natural Resource Agency (CNRA), climate change is already affecting California and is projected to continue to do so well into the foreseeable future. Current and projected changes include increased temperatures, sea level rise, a reduced winter snowpack altered precipitation patterns, and more frequent storm events. Over the long term, reducing greenhouse gases can help make these changes less severe, but the changes cannot be avoided entirely. Unavoidable climate impacts can result in a variety of secondary consequences including detrimental impacts on human health and safety, economic continuity, ecosystem integrity and provision of basic services. The CNRA's 2014 Climate Adaptation Strategy (CAS) delineated how climate change may impact and exacerbate natural hazards in the future, including wildfires, extreme heat, floods, and drought.:

- Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in Nevada County and the rest of California, which are likely to increase the risk of mortality and morbidity due to heat-related illness and exacerbation of existing chronic health conditions. Those most at risk and vulnerable to climate-related illness are the elderly, individuals with chronic conditions such as heart and lung disease, diabetes, and mental illnesses, infants, the socially or economically disadvantaged, and those who work outdoors.
- Higher temperatures will melt the Sierra snowpack earlier and drive the snowline higher, resulting in less snowpack to supply water to California users. > Droughts are likely to become more frequent and persistent in the 21st century.

- Intense rainfall events, periodically ones with larger than historical runoff, will continue to affect California with more frequent and/or more extensive flooding.
- Storms and snowmelt may coincide and produce higher winter runoff from the landward side, while accelerating sea-level rise will produce higher storm surges during coastal storms. Together, these Nevada County 4-53 Local Hazard Mitigation Plan Update August 2017 changes may increase the probability of floods and levee and dam failures.
- Warmer weather, reduced snowpack, and earlier snowmelt can be expected to increase wildfire through fuel hazards and ignition risks. These changes can also increase plant moisture stress and insect populations, both of which affect forest health and reduce forest resilience to wildfires. An increase in wildfire intensity and extent will increase public safety risks, property damage, fire suppression and emergency response costs to government, watershed and water quality impacts, vegetation conversions and habitat fragmentation.

The Nevada County Transportation Commission (NCTC) received a Caltrans FY 20/21 Regional Planning Assistance Grant to prepare a transportation focused planning effort to identify the climate-related weaknesses of the transportation system in Nevada County, including risks related to increased wildfire risks, heavy precipitation and snowfall events, that will provide actionable strategies for integration into transportation plans, transportation improvement programs, and alignment with emergency response plans for the region.

The title of this planning effort is the “READY Nevada County - Extreme Climate Event Mobility & Adaptation Plan” and is being developed in coordination with Caltrans District 3, the Nevada County Office of Emergency Services, first responders, and input from public stakeholders. This planning effort was initiated by NCTC in November of 2020 with the selection of GHD Transportation Consultants Inc. to assist the preparation of the study and guide multiple public engagement activities. The first public workshop was held via Zoom on May 5th to kick-off the study and give overview of the project, existing conditions, and provide an opportunity for input as we get started on the project.

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.² 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

Most climate scientists predict increased frequency and intensity of rain events related to global climate change, although how frequent and how intense such storms are, is unclear. Nevertheless, regional climate forecasts project California to receive less precipitation overall in

the future, with the potential for heavier individual events and more falling as rain than snow. The District 3 Caltrans Climate Change Vulnerability Assessment (2019) analyzed potential changes in the 100-year storm event over time. The 100-year storm event is a metric commonly considered in the design of highway infrastructure.

Average observed 100-year storm precipitation from 1961 to 1990 was 7.89 inches and ranged from 5.83 to 15.01 inches over that time period. Mapping in the District 3 Climate Change Vulnerability Assessment based on data from 1950 to 2005 shows that the project area on SR-49 could experience a 5.0 to 9.9 percent increase in 100-year storm precipitation depth (i.e., heavier rainfall) as early as 2025 and through 2085 (Caltrans 2019), an increase of less than 1 inch. The Caltrans Hydraulics Branch found the proposed project is in a FEMA Zone X, outside the 100-year and 500-year floodplain. Existing culverts would be rehabilitated and extended. With standard measures and BMPs, the project would likely withstand future increases in extreme precipitation events.

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 high and very high fire hazard severity zones. While the project area is close to the Local Responsibility Area and 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, median and additional travel lanes 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 and within a developed area with no new infrastructure development proposed.
- Caltrans 2018 revised Standard Specification 7-1.02M(2) mandates fire prevention procedures during construction, including a fire prevention plan.
- During construction, Caltrans would develop a traffic management plan that would be consistent with local emergency and evacuation plans.
- The project would reduce congestion and travel delay which would decrease emergency response time.
- Due to the implementation of Caltrans' standard measures and best management practices, no impacts are anticipated due to drainage improvements.

- Traffic Management Systems, including Changeable Message Signs will provide critical information during an emergency and can be used to alert the public during times of high fire danger.

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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 Project Development Team (PDT) meetings, outreach and public 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.

Notice of Preparation

Caltrans, as CEQA Lead Agency, distributed a Notice of Preparation of a Draft Environmental Impact Report for the proposed project on July 14, 2020. A copy of the NOP is included in Appendix C.

The Notice of Preparation requested comments from the public regarding environmental issues, reasonable alternatives and reasonable mitigation measures that should be discussed in the Draft Environmental Impact Report to address each agency's specific concerns in their areas of responsibility. The 30-day comment period closed on August 12, 2020.

The Environmental Impact Report/Environmental Assessment would be made available for public and agency review and comment for 45 days. Caltrans has ensured that the document would be made available to all appropriate parties and agencies, 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 will be made available online at <https://dot.ca.gov/caltrans-near-me/district-3/d3-programs/d3-environmental/d3-environmental-docs>

Nevada County Transportation Commission

As the project sponsor, NCTC has been involved in project development team meetings, project coordination and public outreach throughout the various stages of project development.

Tribal Consultation

The Native American Heritage Commission (NAHC) was contacted June 2016 to request a search of the Sacred Land Files and request a list of Native American tribes or individuals with potential interests, concerns, and/or knowledge regarding cultural resources or Traditional Cultural Properties that may be affected by the project. A list of Native American groups and

individuals that may have knowledge or concerns regarding cultural resources for the project area was also included by the NAHC. Correspondence was sent in June of 2016 and January of 2017 to all contacts provided by the NAHC. The initial correspondence was followed up by phone calls and/or emails.

The only response received was from the United Auburn Indian Community of the Auburn Rancheria (UAIC), who requested to be a consulting party on the project and identified an area of concern within the ADI at the Berriman Ranch (further discussed in the Cultural Resource Evaluation Report, Baxter 2019)

Public Meetings

In the early stages of project development, Caltrans hosted a public meeting August 5, 2015 at the Grass Valley City Hall in which various project alternatives were presented to the public with feedback requested. The notice of the open house was advertised in the local Union newspaper, distributed via press release to media and local contacts, and mailers were sent to approximately 200 individuals and stakeholders with businesses or residences near the project location. Caltrans staff was available to answer questions about the project and present proposed design alternatives throughout the three-hour open house. Attendees were asked to provide comment and could also vote on their proposed project alternative of choice, providing valuable feedback during the project development phase.

Chapter 5. List of Preparers

The following staff contributed to the preparation of this EIR/EA.

Kelli Angell, Biologist. Contribution: Natural Environment Study (NES)

Youngil Cho, Transportation Engineer. Contribution: Air Quality Study & Energy Analysis

Sean Cross, NPDES Coordinator. Contribution: Water Quality Assessment

Marta Martinez, Associate Environmental Coordinator. Contribution: Community Impact Analysis

Kelly McNally, Branch Chief. Contribution: Document Review

Mark Melani, Transportation Engineer. Contribution: Initial Site Assessment

Danielle Ruiz, Associate Environmental Coordinator. Contribution: Cultural Resources Section

Janet Sager, Landscape Architect. Contribution: Visual Impact Assessment

Rita Sohal, Associate Right-of-Way Agent. Contribution: Relocation Impact Statement

Eric Souza, Transportation Engineer. Contribution: Design Senior

Kristen Stubblefield, Associate Environmental Planner. Contribution: Coordinator and Document writer

Sam Vandell, Transportation Engineer. Contribution: Project Manager

Jennifer White, Landscape Architect. Contribution: Visual Impact Assessment

Barbara Wolf, Environmental Planner. Contribution: Climate Change Policy Advisor, GHG Review

Mike Woodman, Nevada County Transportation Commission. Contribution: Document Review

Erick Wulf, Archaeologist. Contribution: Task Order Manager and Document Review

Saeid Zandian-Jazi, Transportation Engineer. Contribution: Noise Study

Chapter 6. Distribution List

The State Clearinghouse distributed copies of this document to reviewing agencies. In addition, copies were sent to:

- Nevada County Transportation Commission
- Sam Longmire, Northern Sierra Air Quality Management District,
- Tim Kiser, Interim City Manager/Public Works Director, City of Grass Valley
- Tom Last, Community Development Dept., City of Grass Valley
- Brian Foss, Planning Director, Nevada County
- Amy Wolfson, City Planner, City of Nevada City
- Mathew Moore, United Auburn Indian Community of the Auburn Rancheria of California
- Madelyn Helling Nevada County Library
- Nevada County office public kiosk
- Grass Valley Library
- Auburn Library

APPENDICES

Appendix A. Title VI Policy Statement

IS/EA SR 57 Northbound Improvement Project
Appendix B. Title VI Policy Statement

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY

EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION

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*Making Conservation
a California Way of Life.*

April 2018

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 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, please visit the following web page:
http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

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, 1823 14th Street, MS-79, Sacramento, CA 95811. Telephone (916) 324-8379, TTY 711, email Title.VI@dot.ca.gov, or visit the website www.dot.ca.gov.


LAURIE BERMAN
Director

*"Provide a safe, sustainable, integrated and efficient transportation system
to enhance California's economy and livability"*

Appendix B. Summary of Relocation Benefits

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 would be assigned to a relocation advisor, who would 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 would 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 would 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 would receive information on comparable properties for lease or purchase (for business, farm, and nonprofit organization relocation services, see below).

Residential replacement dwellings would 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 would 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 would 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 would not be asked to move without first being given at least 90 days written notice. Residential occupants eligible for relocation payment(s) would 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 would 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, would be eligible for reimbursement of moving costs. Displacees would 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 would 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 would 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 would 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 would 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 would 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 on the internet at: <https://dot.ca.gov/programs/right-of-way/relocation-assistance-program>.

Appendix C. Notice of Preparation

To: Responsible/Trustee Agency

From: California Dept. of Transportation
Environmental Management/M2
703 B Street
Marysville, CA 95901

Subject: **Notice of Preparation of a Draft Environmental Impact Report**

Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

Project Title: NEV-49 Corridor Improvement Project (EA: 03-4e170).

Project Location: The proposed project is located on State Route (SR) 49 in Nevada County, California between post miles (PM) 10.8/R13.3 near the City of Grass Valley.

Project Description: The California Department of Transportation (Caltrans) proposes to improve safety, operations, and mobility on SR 49 in Nevada County from post mile 10.8 to R13.3 through the addition of northbound and southbound truck climbing lanes outside an urbanized area, 14'-22' median with barrier, 8'-10' shoulders, right turn lanes, and two at-grade access-controlled intersections. This project will be built in three phases of construction based on funding availability. This project will improve safety, operations, and mobility of vehicular traffic, pedestrians, and cyclists on SR 49 by: 1) Constructing northbound and southbound truck climbing lanes / segments of auxiliary lanes to improve operations, 2) Reducing the severity and frequency of collisions at public road intersections and roadways, 3) Reducing cross-centerline collisions, 4) Improving the roadway to meet current design standards and improve vertical curve sight distance, 5) Providing a 12' x 12' animal crossing that would assist in avoiding collisions between vehicles and animals, 6) Implementing identified improvements in the Nevada County Active Transportation Plan, which identifies SR 49 as needing Class III bicycle facilities and providing adequate shoulders for disabled vehicles and California Highway Patrol enforcement activities.

This is to inform you that the California Department of Transportation will be the lead agency and will prepare an Environmental Impact Report (EIR) for the project described in the following pages. Your participation as a responsible agency is requested in the preparation and review of this document.

We need to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.


A more detailed project description, location map, and the potential environmental effects are contained in the following materials.

A copy of the Draft Environmental Impact Report is not attached.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please direct your response to Kristen Stubblefield Telephone (530) 741-5124 at the address shown above or email: kristen.stubblefield@dot.ca.gov. Please supply us with the name for a contact person in your agency.

Date: 7/10/20

Signature: 

Title: Supervising Environmental Planner

Notice of Preparation

Project Title

NEV-49 Corridor Improvement Project (EA: 03-4e170)

Project Location

The proposed project is located on State Route (SR) 49 in Nevada County, California between post miles (PM) 10.8/R13.3 near the City of Grass Valley, California.

Overview of SR 49 in the Project Limits

The scope of this project is encompassed by Segment 11 (NEV PM 0.00/R14.475) of the October 2017 Transportation Concept Report. The segment is a 14.48-mile-stretch of 2-lane and 4-lane conventional highway and freeway from the Placer/Nevada County line to the SR 20 junction in Grass Valley. This segment is a major roadway connecting Grass Valley and Nevada City with I-80 in Auburn to the south. It is the lifeline for much of Nevada County's freight traffic and provides access to recreational attractions. This segment of SR 49 experiences AM and PM Peak Hour congestion and is currently operating at Level of Service E.

The following are projects within or near the project area:

According to the Caltrans' North Region Data Library, the following Caltrans projects are in various stages of development, from early planning stages to construction: 3h510, 1j090, 0h420, 0e470, 1h250, and 1g760

<http://svgcesridvweb.ct.dot.ca.gov/arcgis/apps/webappviewer/index.html?id=a050ffb0d324017af02a3e7cf2f1a54>

Project Description

There are three alternatives under consideration for this project: Alternative 3A, Alternative 3B, and the No-Build Alternative. The build alternatives will be built in phases, as funding becomes available. The initial phases are included in both alternatives:

- Phase 1: Construct a northbound truck climbing lane / auxiliary lane, continuous two-way-left-turn-lane (TWLTL) and widen existing exterior shoulders to 10.' Construct Southbound right-turn lanes at four intersections and a 12' X 12' animal crossing.
- Phase 2: Construct a Southbound truck climbing lane / auxiliary lane.

Alternative 3A: 22' Median with Barrier, Signalized Intersections, Frontage Roads

In addition to the northbound and southbound truck climbing lanes / auxiliary lanes, continuous two way left turn lane, widened exterior shoulders and animal crossing constructed in phases 1 and 2, Alternative 3A proposes to construct a 22' wide median with a type 60M concrete barrier, two signalized intersections, frontage roads, sections of sound wall designed to be aesthetically pleasing between SR-49 and frontage roads. In addition, culverts and pavement will be rehabilitated, additional safety features will be provided, and Transportation Management Systems (TMS) and lighting elements will be upgraded.

Alternative 3B: 22' Median with Barrier, Roundabouts, Frontage Roads

In addition to the northbound and southbound truck climbing lanes / auxiliary lanes, continuous two way left turn lane, and widened exterior shoulders constructed in phases 1 and 2, Alternative 3B proposes to widen the existing road by constructing a 22' wide median with a type 60M concrete barrier, two roundabouts, frontage roads, sections of sound wall designed to be aesthetically pleasing between SR-49 and frontage roads. All other elements of work are identical to Alternative 3A.

Initial Phases Included in Both Build Alternatives

Phase 1 of Alternatives 3A & 3B: Additional Northbound Lane, TWLTL, 10' Shoulders

Phase 1 proposes to construct a Northbound truck climbing lane / auxiliary lane, 16' continuous two-way left-turn lane and widening existing exterior shoulders to 10'. Construct Southbound right-turn lanes at four intersections and a 12'x12' animal crossing.

Phase 2 of Alternatives 3A & 3B: Additional Southbound Lane

In addition to the elements constructed during phase 1 construction, phase 2 proposes to construct a Southbound truck climbing lane / auxiliary lane.

Probable Environmental Effects

The proposed project is expected to result in temporary and permanent environmental effects. The draft Environmental Impact Report/Environmental Assessment (EIR/EA) will disclose what resources would be affected, the level of significance, and feasible measures to reduce impacts. Probable environmental effects of the proposed project are outlined below.

Aesthetics

The proposed project could degrade the existing visual character or quality of the site and its surroundings; however, the impacts are not expected to be substantial.

During the preparation of the EIR/EA, Caltrans will identify all feasible measures to avoid and minimize impacts to visual resources.

Agricultural and Forest Resources

No significant impacts anticipated.

Air Quality

The proposed project is expected to result in temporary, short-term air quality impacts from construction activities; however, these impacts will be minimized with incorporation of avoidance and minimization measures. During the preparation of the EIR/EA, Caltrans will analyze project impacts to air quality including long-term impacts of criteria pollutants and mobile source air toxics.

Biological Resources

The project will have no effect on any species identified as candidate, sensitive, or special status species in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife (CDFW) or the US Fish and Wildlife Service (USFWS).

The project will not have any effects on sensitive natural communities identified in local or regional plans, policies, and regulations or by the CDFW or USFWS.

A delineation of the aquatic resources has been performed in accordance with US Army Corps of Engineers (USACE) guidance and the impacts of the proposed project will require filling in wetlands and other waters in order to widen SR-49. A preliminary jurisdictional determination (USACE concurred with the delineation) was received from USACE on May 16, 2019.

The project will affect federally protected wetlands and waters as defined by Section 404 of the Clean Water Act through direct removal and filling. Caltrans proposes to mitigate for the impacts to these jurisdictional resources by purchasing in-lieu fee credits.

Cultural Resources

There is potential for cultural resources to be located within the project area. Analysis of the design will be conducted during preparation of the EIR/EA to determine the potential impacts to these resources, as well as potential avoidance, minimization, and/or mitigation measures.

Energy

The project may result in short- and/or long-term impacts to energy resources during project construction and/or operation. Analysis will be conducted during preparation of the EIR/EA to evaluate impacts to Energy.

Geology and Soils

No impacts anticipated.

Greenhouse Gas Emissions

The project may contribute to carbon dioxide equivalent (CO₂e) emissions. During the preparation of the EIR/EA, Caltrans will analyze impacts to CO₂ emissions.

Hazards/Hazardous Materials

There are hazardous materials located within the project area, such as, Aerial Deposited Lead (ADL), thermoplastic paint striping, Treated Wood Waste (TWW) and assumed asbestos containing materials in existing structures. During preparation of the EIR/EA, further analysis will be conducted to determine potential avoidance, minimization, and/or mitigation impacts.

Hydrology and Water Quality

Due to the anticipated quantity of soil disturbance during construction, the project will be regulated under the Construction General Permit (CGP). The CGP contains specific requirements meant to address potential erosion, sedimentation, and the transportation of potential pollutants to receiving waters. In accordance with the CGP, it is anticipated that field Best Management Practices (BMPs) will be implemented, monitored, and evaluated to the maximum extent practicable to reduce or prevent potential impacts to water bodies within the project limits.

An analysis will be conducted during subsequent project phases to further evaluate potential water quality impacts, within the project limits, and potential adverse impacts to receiving waters that may occur as the result of project activities.

Land Use/Planning

The proposed project would not conflict with any applicable land use plan, policy, or regulation of any agencies with jurisdiction over the project (including, but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

Mineral Resources

No impacts anticipated.

Noise

The proposed project could result in exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies. Analysis will be conducted during preparation of the EIR/EA to evaluate the potential noise impacts.

Population/Housing

The proposed project will displace existing residential housing and non-residential/commercial properties. For both build alternatives, approximately 37 residential housing units and 24 commercial properties will require relocation. During the design phase, all efforts will be made to minimize impacts to housing.

Public Services

No significant impacts anticipated.

Recreation

No impacts anticipated.

Transportation/Traffic

The project is not anticipated to conflict with any applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, or conflict with an applicable congestion management program or conflict with adopted policies, plans or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Tribal Cultural Resources

No impacts anticipated.

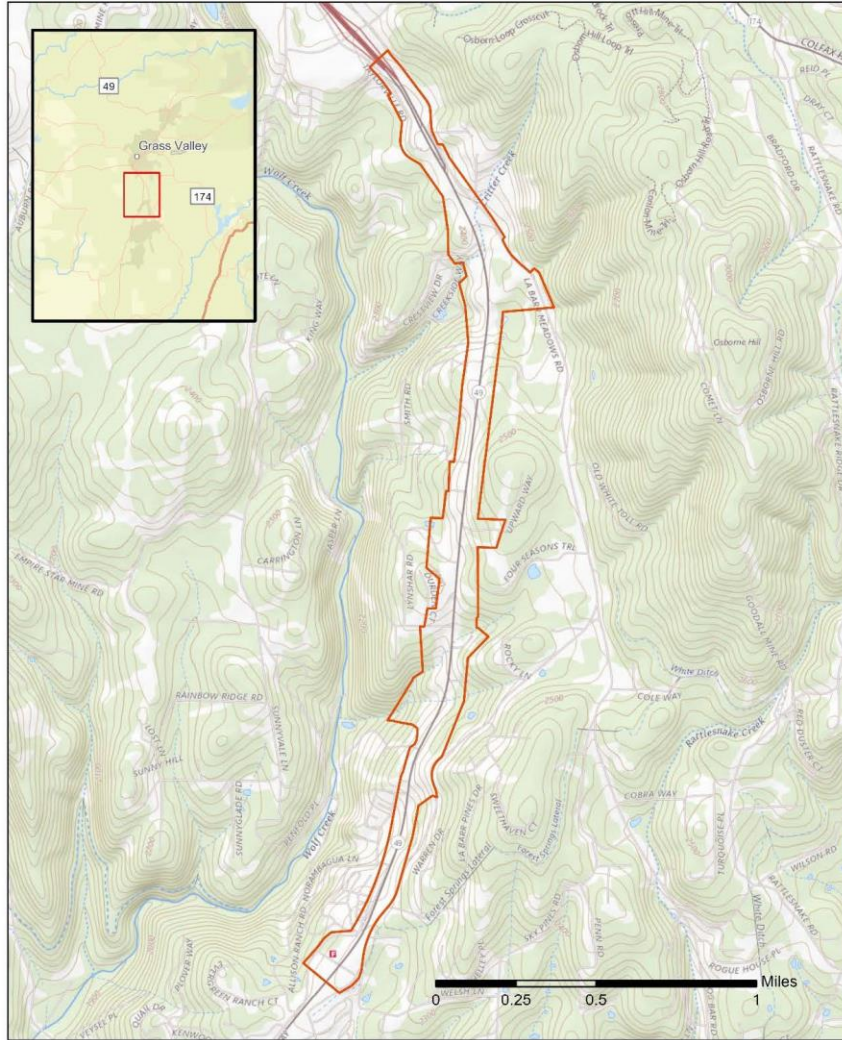
Utilities/Service Systems

The proposed project could require the relocation of existing facilities, including, but not limited to gas, electric and fiber optic. Through the design of the project, Caltrans will identify feasible measures to avoid and minimize impacts to utilities and service systems.

Wildfire

The addition of wider shoulders, median and additional travel lanes would increase the width of the road as a firebreak and provide additional areas for emergency response vehicle staging. No other impacts are anticipated.

Project Location Map



Nev-49 Corridor Improvement Project
Vicinity Map
EA: 03-4E170
EFIS: 0315000064



Grass Valley Quadrangle
California
7.5-Minute Series

Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset, USGS Global Ecosystems, U.S. Census Bureau TIGER/Line data, USFS Road Data, Natural Earth Data, U.S. Department of State Humanitarian Information Unit, and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data (refreshed May, 2020).

Appendix D. Interagency Consultation

8. Appendices

RE: Interagency Consultation Request -SR 49 Corridor Improvement Project

OConnor, Karina <OConnor.Karina@epa.gov>

Mon 6/22/2020 2:03 PM

To: Mike Woodman <mwoodman@nccn.net>; Joseph.Vaughn@dot.gov <Joseph.Vaughn@dot.gov>; Tavitias, Rodney A@DOT <rodney.tavitias@dot.ca.gov>; Cho, Youngil@DOT <Youngil.Cho@dot.ca.gov>; 'Sam Longmire' <saml@myairdistrict.com>

Cc: Melim, Suzanne M@DOT <suzanne.melim@dot.ca.gov>; Stubblefield, Kristen@DOT <Kristen.Stubblefield@dot.ca.gov>; Vandell, Sam L@DOT <sam.vandell@dot.ca.gov>; 'Dan Landon' <dlandon@nccn.net>

EXTERNAL EMAIL. Links/attachments may not be safe.

EPA concurs that this project is not regionally significant and contains some components that are exempt under 93.126 and others that are exempt under 93.127, therefore the project is exempt from a regional emissions analysis for conformity. As there are no project level analysis components for ozone (not CO or PM), no hot spot project-level conformity analysis is required.

Thanks, Karina

Karina OConnor
Air Planning Office
US EPA Region 9 (AIR-2)
75 Hawthorne St.
San Francisco, CA 94105
(775) 434-8176
oconnor.karina@epa.gov

RE: Interagency Consultation Request -SR 49 Corridor Improvement Project

Vaughn, Joseph (FHWA) <Joseph.Vaughn@dot.gov>

Tue 6/23/2020 10:58 AM

To: OConnor, Karina <OConnor.Karina@epa.gov>; Mike Woodman <mwoodman@nccn.net>; Tavitias, Rodney A@DOT <rodney.tavitias@dot.ca.gov>; Cho, Youngil@DOT <Youngil.Cho@dot.ca.gov>; 'Sam Longmire' <saml@myairdistrict.com>
Cc: Melim, Suzanne M@DOT <suzanne.melim@dot.ca.gov>; Stubblefield, Kristen@DOT <Kristen.Stubblefield@dot.ca.gov>; Vandell, Sam L@DOT <sam.vandell@dot.ca.gov>; 'Dan Landon' <dlandon@nccn.net>

EXTERNAL EMAIL. Links/attachments may not be safe.

FHWA concurs this project is exempt from a regional emissions analysis for conformity. As there are no project level analysis components for ozone (not CO or PM), no hot spot project-level conformity analysis is required.

Thanks

Joseph Vaughn
Environmental Specialist
FHWA, CA Division
(916) 498-5346

Re: Interagency Consultation Request -SR 49 Corridor Improvement Project

Sam Longmire <saml@myairdistrict.com>

Mon 6/15/2020 2:36 PM

To: Mike Woodman <mwoodman@nccn.net>

Cc: OConnor, Karina <OConnor.Karina@epa.gov>; Joseph.Vaughn@dot.gov <Joseph.Vaughn@dot.gov>; Tavitias, Rodney A@DOT <rodney.tavitias@dot.ca.gov>; Cho, Youngil@DOT <Youngil.Cho@dot.ca.gov>; Melim, Suzanne M@DOT <suzanne.melim@dot.ca.gov>; Stubblefield, Kristen@DOT <Kristen.Stubblefield@dot.ca.gov>; Vandell, Sam L@DOT <sam.vandell@dot.ca.gov>; Dan Landon <dlandon@nccn.net>; Gretchen Bennitt <gretchenb@myairdistrict.com>

EXTERNAL EMAIL. Links/attachments may not be safe.

Mr. Woodman:

The Northern Sierra Air Quality Management District has reviewed the project documents and concurs that the project is not regionally significant and that it is exempt from an air quality conformity analysis by virtue of being predominantly a safety project. I am entirely open to discussing this determination if any of the consultation partners are not fully in agreement.

Please contact me with any questions.

Sincerely,

Sam Longmire, APCS

Re: Interagency Consultation Request -SR 49 Corridor Improvement Project

Cho, Youngil@DOT <Youngil.Cho@dot.ca.gov>

Tue 6/23/2020 10:39 AM

To: Mike Woodman <mwoodman@nccn.net>; OConnor.Karina@epa.gov <OConnor.Karina@epa.gov>; Joseph.Vaughn@dot.gov <Joseph.Vaughn@dot.gov>; Tavitias, Rodney A@DOT <rodney.tavitias@dot.ca.gov>; 'Sam Longmire' <saml@myairdistrict.com>

Cc: Melim, Suzanne M@DOT <suzanne.melim@dot.ca.gov>; Stubblefield, Kristen@DOT <Kristen.Stubblefield@dot.ca.gov>; Vandell, Sam L@DOT <sam.vandell@dot.ca.gov>; 'Dan Landon' <dlandon@nccn.net>

Good morning, ICR group,

Caltrans concurs that the State Route 49 Corridor Improvement project (03-4E170) is not regionally significant. This project is exempt from a regional emissions analysis.

Thank you.

Youngil Cho

Caltrans, District 3
703 B Street
Marysville, CA 95901
Phone: (530) 741-4266

8. Appendices

Mike Woodman <mwoodman@nccr.net>

Thu 6/11/2020 3:25 PM

To: O'Connor, Karina@epa.gov; Joseph, Vaughn@dot.gov; Tavitas, Rodney A@DOT; Cho, Youngil@DOT; 'Sam Longmire' <saml@myairdistrict.com>

Cc: Melim, Suzanne M@DOT; Stubblefield, Kristen@DOT; Vandell, Sam L@DOT; 'Dan Landon' <dlandon@nccr.net>



4 attachments (2 MB) Download all

EXTERNAL EMAIL: Links/attachments may not be safe.

Air Quality Conformity Consultation Partners,

The Nevada County Transportation Commission in coordination with Caltrans District 3 is requesting an interagency consultation for air quality conformity for the State Route 49 Corridor Improvement Project (03-4E170, PM 11.1 – 13.3). Attached for your review is the Interagency Consultation Form, Detailed Project Description Maps, Project Location Maps, and the Caltrans District 3 Truck Climbing Lane Analysis. As part of project level conformity under NEPA, it requires a concurrence determination of whether the project is not regionally significant and exempt from conformity. Based on my review of the project and the project components, it is my opinion the project is not regionally significant and exempt from conformity. The project and project components are exempt from the requirement to determine conformity per section 40 CFR 93.126 and are exempt from regional emissions analysis requirements per 40 CFR 93.127, will not have regional impacts, and will not interfere with implementation of any Transportation Control Measures adopted in the State Implementation Plan for the Western Nevada County non-attainment area.

This project falls under the 23 USC 327 federal process, and is located in an isolated rural area non-attainment area. The project is located in western Nevada County which is a federal nonattainment area for Ozone only, but is attainment/unclassified for PM2.5, PM10, and Carbon Dioxide. As such, it requires written concurrence by EPA (Karina O'Conner), FHWA (Joseph Vaughn), Northern Sierra Air Quality Management District (Sam Longmire), and Caltrans (Youngil Cho).

Please review and confirm via email if you concur that the project is not regionally significant and exempt from air quality conformity. **Please email your response or any questions and comments by 5 p.m., Friday, June 26, 2020. Please remember to use "reply all," to make comments to the group. Otherwise, you may also contact me directly.**

A General Overview of the State Route 49 Corridor Improvement Project is Provided Below:

State Route 49 Corridor Improvement Project (PM 11.1-13.3): The project is located on State Route 49 in the rural unincorporated area of western Nevada County just south of the City of Grass Valley. The project proposes to improve operations, mobility, and safety through the addition of NB and SB Truck Climbing Lanes Outside an Urbanized Area, 14'-22' Median with Barrier, 8'-10' Shoulders, and two at-grade access-controlled intersections that will be signalized or roundabouts.

The attached graphic of the project identifies the location and distances associated with the NB and SB truck climbing lanes outside of an urbanized area, the two at-grade access controlled intersections and associated channelization, and the remaining auxiliary lane segments that are less than a mile is attached. The project also proposes to add a median barrier within the project limits.

All of the project components are exempt (see below):

Section 93.126 Table 2 Exempt Features:

- Shoulder Improvements/widening narrow pavements
- Median Barrier
- Truck Climbing Lanes Outside an Urbanized Area (NB 1.18 miles & SB 0.29 miles - verified by truck climbing analysis)
- Segments of Auxiliary Lanes less than a mile, supplementary to through traffic movement (0.33 miles, 0.31 miles, 0.11 miles, 0.20 miles, & 0.07 miles as noted on graphic)

Section 93.127 Table 3 Exempt Features:

- Intersection signalization projects at individual Intersections
- Intersection channelization projects
- Intersection channelization projects (Possibility of roundabouts as alternative to signalization)

Western Nevada County is designated as an isolated rural non-attainment area for Federal Ozone Standards, but is attainment/unclassified for PM 10, PM 2.5, and CO.

Mike Woodman, Deputy Executive Director
Nevada County Transportation Commission
916-716-2559 cell

Interagency Consultation Form

State Route 49 Corridor Improvement Project (03-4E170)				
Project Description: The project proposes to improve operations, mobility, and safety on State Route 49 (PM 11.1 – 13.3) through the addition of NB and SB Truck Climbing Lanes Outside an Urbanized Area, 14'-22' median with barrier, 8'-10' shoulders, and two at-grade access-controlled intersections.				
Type of Project: Truck Climbing Lanes Outside Urbanized Area, Median Barrier, Signalization & Channelization, shoulders			County: Nevada County	
Narrative Location/Route & Post Miles: The project is located on State Route 49 in rural western Nevada County/SR 49 (PM 11.1-13.3). Western Nevada County is an isolated rural non-attainment area for Federal Ozone, but attainment unclassified for PM 2.5, PM 10, and CO.				
Caltrans Projects – EA#: 03-4E170				
Lead Agency: Caltrans District 3				
Contact Person: Mike Woodman, Deputy Executive Director, Nevada County Transportation Commission			Email: mwoodman@nccn.net	
Phone#: (916) 716-2559				
Hot Spot Pollutant of Concern (check one or both) PM2.5 <input type="checkbox"/> PM10 <input type="checkbox"/> (Not Applicable Attainment Unclassified PM 2.5 & PM 10)				
Is this a 23 USC 326 or a 23 USC 327 federal process under MAP-21 (formerly 6004 and 6005)? <i>(check one)</i> 23 USC 326 <input type="checkbox"/> 23 USC 327 <input checked="" type="checkbox"/>				
Federal Action for which Project-Level PM Conformity is Needed <i>(check appropriate box)</i> Categorical Exclusion (NEPA) <input type="checkbox"/> EA or Draft EIS <input checked="" type="checkbox"/> FONSI or Final EIS <input type="checkbox"/>				
Scheduled Date of Federal Action: April 2021				
Current Programming Dates <i>(as appropriate)</i>				
	PE/Environmental	ENG	ROW	CON
Start	01/12/2015	April 2021		
End	April 2021	June 2024		

Determination Not Regional Significant and Exempt from Conformity – Project Summary for Interagency Consultation

Project Purpose and Need (Summary):

The project limits consist of only one travel lane in each direction, through mountainous terrain, with shoulders as narrow as four feet wide. The traffic volumes on these single lane sections and slow-moving uphill vehicles create above-average congestion within the project limits. The highway operates at substandard Level of Service (LOS) in the northbound direction during the morning peak hour and at a substandard LOS in the southbound direction during the afternoon and PM peak hour. The SR 49 corridor is identified in the Caltrans California Freight Mobility Plan as a Tier 3 freight facility on the Highway Freight Network and is designated as a terminal access route for Surface Transportation Assistance Act (STAA) trucks. *The 2015 Caltrans District 3 Goods Movement Study* identifies SR 49 as having a high deficiency for goods movement mobility in the base year, and in the no-build forecast. Both northbound and southbound elevation gains within the project limits reduce truck speeds and meet the criteria for truck climbing lanes.

With the exception of the transition areas at La Barr Meadows Road Signal and the Golden Center freeway south of McKnight Way (where SR 49 has two lanes in each direction), this segment of SR 49 is a two-lane highway with approximately 18 access points. All of the access points (with the exception of La Barr Meadows Road signal at the southern terminus) are side-street stop-controlled intersections. The majority of those access points do not have dedicated turn lanes on SR 49. Each of these uncontrolled intersections creates multiple conflict points on the corridor. Of the stop-controlled intersections on the project, three intersections operate at very substandard LOS F during the morning peak hour and four intersections operate at very substandard LOS F during the afternoon peak hour. With the growth in traffic on SR 49, this may potentially result in an increase in the number of collisions involving vehicles entering and exiting SR 49, creating high speed/low speed conflicts. The lack of a median area keeps opposing lanes of high-speed traffic close together and provides no refuge for vehicles making left turns from local roads and driveways to the highway. Shoulder widths throughout this segment vary from 4-10' and deter bicycle and pedestrian utilization and do not provide a safe refuge for maintenance operations, disabled vehicles, or law enforcement. The Nevada County Active Transportation Plan identifies SR 49 as planned for Class III bicycle facilities and notes the need for continuous standard shoulders.

Surrounding Land Use/Traffic Generators (Describe effect of traffic generators or diesel traffic. Also, provide a map, preferably aerial photo, with labeled locations of nearby (within 500 ft.) sensitive receptors, such as daycare facilities and schools):

The proposed segment of SR 49 has no primary traffic generators, such as major retail, shopping centers, schools, or daycare facilities within the immediate vicinity. SR 49 is also considered a regional corridor for goods movement. However, several driveways exist along the highway that serves residential properties.

Determination Not Regional Significant and Exempt from Conformity – Project Summary for Interagency Consultation

Nevada 49 CIP - La Barr Meadows Road to McKnight Way Interchange							
Open to Traffic	LOS	AADT	AM Peak Hour	PM Peak Hour	Truck AADT	Truck AM Peak	Truck PM Peak
Build 2024 (Alternative 3)	B (NB) A (SB AM) / B (SB PM)	33,770	2,375	2,760	1,824	128	149
No-Build 2024 (Alternative 4)	E (NB) D (SB AM) / E (SB PM)	29,600	2,230	2,465	1,598	120	133
Build 2044 (Alternative 3)	C (NB AM) / B (NB PM) B (SB AM) / C (SB PM)	42,760	3,055	3,690	2,309	165	199
No-Build 2044 (Alternative 4)	E	31,630	2,430	2,620	1,708	131	141

Source: **State Route 49 Traffic Analysis Report**, November 2019, Fehr & Peers

Build Year (2024) References
 AADT and Peak Hour Volumes are from **Figure 7: Highway Segment Volumes Opening Year (2024)**
 Build is Alternative 3, location is between the two new intersections
 No-Build is Alternative 4, location is the same as the Build alternative

LOS is from **Table 14: Highway Operations Northbound – Opening Year (2024)**
 LOS is from **Table 15: Highway Operations Southbound – Opening Year (2024)**
 Where there was more than one LOS among the highway segments, the lowest was selected

Design Year (2044) References
 AADT and Peak Hour Volumes are from **Figure 12: Highway Segment Volumes Horizon Year (2044)**
 Build is Alternative 3, location is between the two new intersections
 No-Build is Alternative 4, location is the same as the Build alternative

LOS is from **Table 19: Highway Operations Northbound – Design Year (2044)**
 LOS is from **Table 20: Highway Operations Southbound – Design Year (2044)**
 Where there was more than one LOS among the highway segments, the lowest was selected

Daily Truck Percentage (5.4%) from **Table 24: Traffic Data for Design Designation**

Only if Facility is an Interchange or Intersection: Opening Year Build and No Build cross-street AADT, % and # trucks, truck AADT): N/A

Only if Facility is an Interchange or Intersection: MTP Horizon Year / Design Year Build and No Build cross-street AADT, % and # trucks, truck AADT): N/A

Determination Not Regional Significant and Exempt from Conformity – Project Summary for Interagency Consultation

Describe potential traffic redistribution effects of congestion relief (impact on other facilities) *The difference between Build and No-Build opening year traffic volumes are based on the assumption that some drivers that choose to divert to the local road network to avoid congestion on SR 49 in the PM Peak Hour may shift back to SR 49 with congestion alleviated.*

(CONTINUED NEXT PAGE)

Determination Not Regional Significant and Exempt from Conformity – Project Summary for Interagency Consultation

Comments/Explanations/Details (*attach additional sheets as necessary*):

Not a Project of Air Quality Concern (POAQC) – Information Provided as Courtesy

Western Nevada County is designated as attainment/unclassified for PM_{2.5}, PM₁₀, and CO therefore the project is not a POAQC and the criteria listed in 40 CFR 93.123(b)(1) are not applicable to the project. See 40 CFR 93.123(b)(1) criteria for POAQC below:

1. New highway projects that have a significant number of diesel vehicles, and expanded highway projects that have a significant increase in the number of diesel vehicles.
2. Projects affecting intersections that are at level-of-service (LOS) D, E, or F with a significant number of diesel vehicles or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.
3. New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location.
4. Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location.
5. Projects in or affecting locations, areas, or categories of sites that are identified in the PM_{2.5}- or PM₁₀-applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

Additionally, this proposed project is not a new highway project, does not create new bus or rail terminals and transfer points, affect intersections that are at level of service (LOS) D, E, or F with a significant number of diesel vehicles, and does not expand existing bus or rail terminals and transfer points. In addition, Appendix B of EPA's Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas gives guidance on what types of projects may be projects of local air quality concern under 40 CFR 93.123(b)(1). This guidance describes a significant number of diesel vehicles as facilities with greater than 125,000 AADT and 8% or more diesel truck traffic. The diesel truck traffic in this project is less than 2,500, and this proposed project does not serve a significant number of diesel vehicles. Therefore, the proposed project is not considered a project of air quality concern (POAQC) for PM₁₀ and/or PM_{2.5}, because it does not meet the definition of a POAQC as defined in EPA's Transportation Conformity Guidance and western Nevada County is attainment unclassified for PM_{2.5}, PM₁₀ and CO.

Determination Exempt from Conformity/Not Regionally Significant

The SR 49 Corridor Improvement Project (03-4E170) and the projects features are exempt from the requirement to determine conformity per 40 CFR 93.126 and are exempt from regional emissions analysis requirements per 40 CFR 93.127, will not have regional impacts, and will not interfere with implementation of any TCMs adopted in the SIP. The project is not regionally significant as the project consists of truck climbing lanes outside an urbanized area, median barrier, signalization and

Determination Not Regional Significant and Exempt from Conformity – Project Summary for Interagency Consultation

channelization, auxiliary lanes less than a mile, supplementary to through traffic movement, and shoulder improvements.

The project is exempt from Conformity per section 93.126 and 93.127 and not regionally significant.
All of the project components are exempt (see following project components):

Section 93.126 Table 2 Exempt Features:

- Shoulder Improvements/widening narrow pavements
- Median Barrier
- Truck Climbing Lanes Outside an Urbanized Area (NB 1.18 miles & SB 0.29 miles - verified by truck climbing analysis)
- Segments of Auxiliary Lanes less than a mile, supplementary to through traffic movement (0.33 miles, 0.31 miles, 0.11 miles, 0.20 miles, & 0.07 miles as noted on graphic)

Section 93.127 Table 3 Exempt Features:

- Intersection signalization projects at individual Intersections
- Intersection channelization projects
- Intersection channelization projects (Possibility of roundabouts as alternative to signalization)

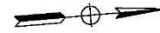
Western Nevada County is designated as an isolated rural non-attainment area for Federal Ozone Standards, but is attainment unclassified for PM 10, PM 2.5, and CO.

Appendix E. Layouts

INDEX OF PLANS

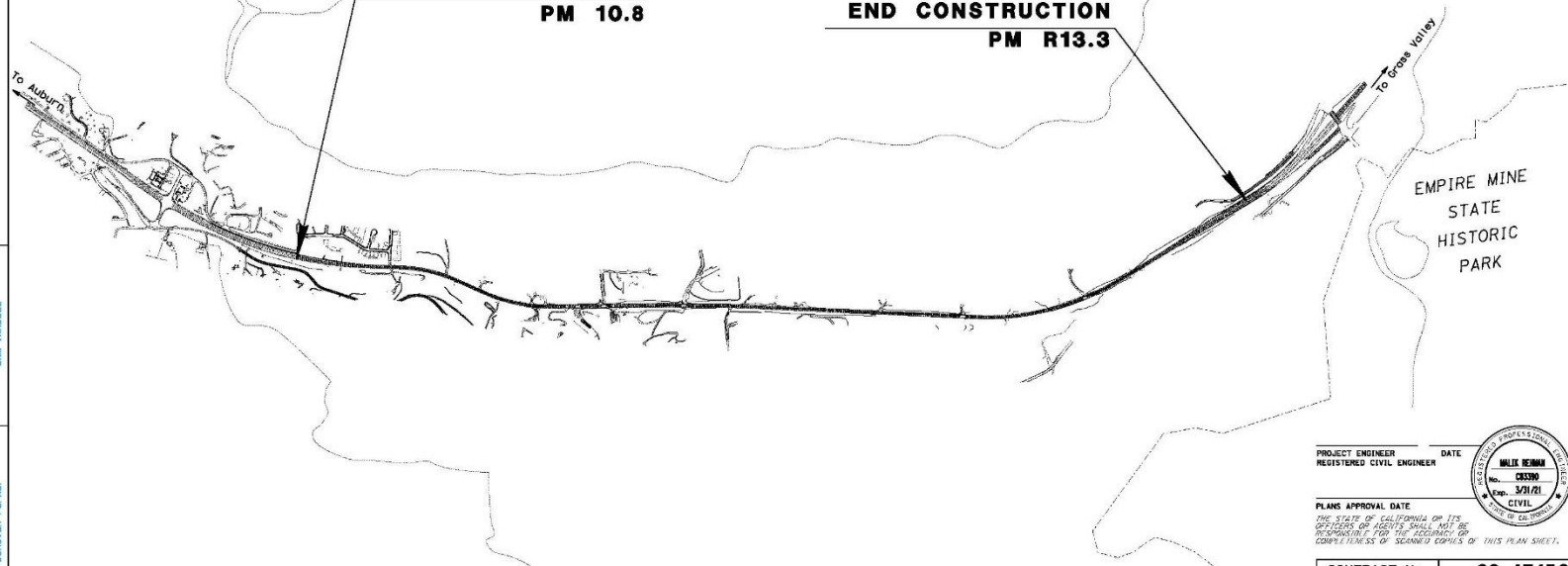
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 PROJECT PLANS FOR CONSTRUCTION ON
 STATE HIGHWAY
 IN NEVADA COUNTY
 NEAR GRASS VALLEY
 FROM 0.1 MILE NORTH OF LA BARR MEADOWS ROAD
 TO MCKNIGHT WAY

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2015



BEGIN CONSTRUCTION
PM 10.8

END CONSTRUCTION
PM R13.3



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	49	10.8/R13.3		



PROJECT MANAGER
SAM VANDELL

DESIGN ENGINEER
Donovan Partner

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

NO SCALE

PROJECT ENGINEER DATE
 REGISTERED CIVIL ENGINEER

MALIK REHMAN
 No. **52530**
 Exp. **3/31/21**
 CIVIL

PLANS APPROVAL DATE

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CONTRACT No. **03-4E170**
 PROJECT ID **0315000084**

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UNIT 0327 PROJECT NUMBER & PHASE 03150000640

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03-DESIGN



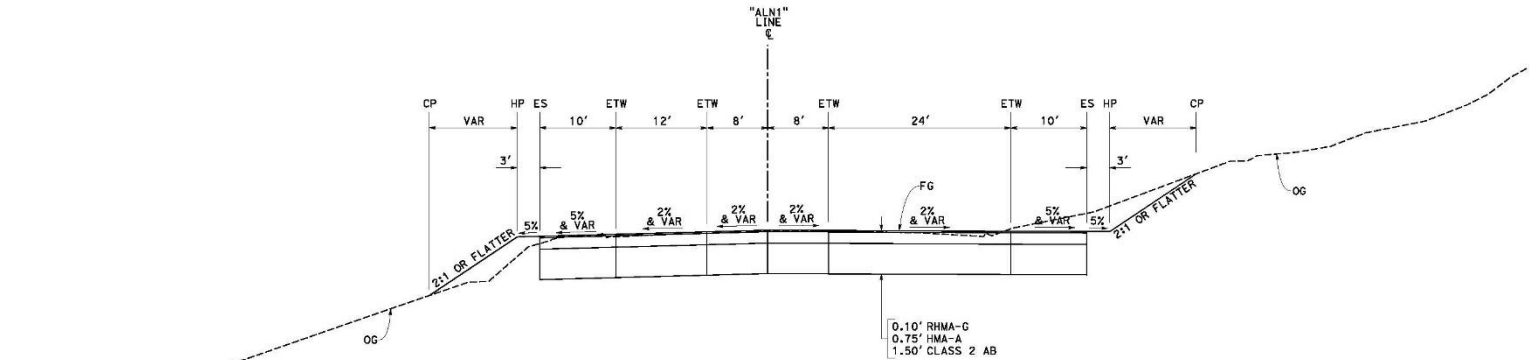
FUNCTIONAL SUPERVISOR
 ERIC SOUZA

CALCULATED/DESIGNED BY
 CHECKED BY

DONOVAN PARKER
 ERIC SOUZA

REVISED BY
 DATE REVISED

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PRELIMINARY NOT FOR CONSTRUCTION					
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PHASE 1

0.10' RHMA-G
 0.75' HMA-A
 1.50' CLASS 2 AB

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UNIT 0327

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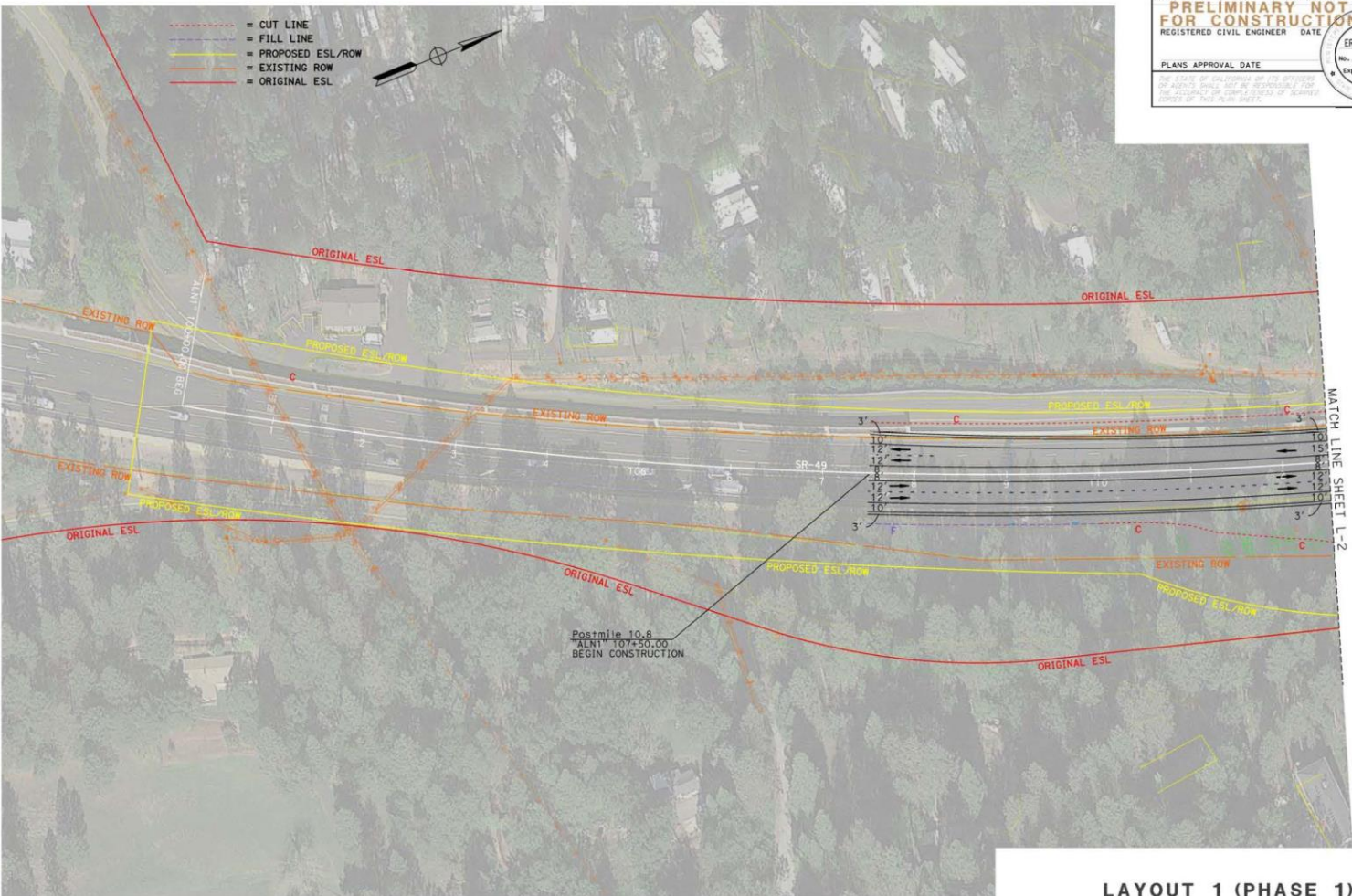
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UNIT 0327

PROJECT NUMBER & PHASE

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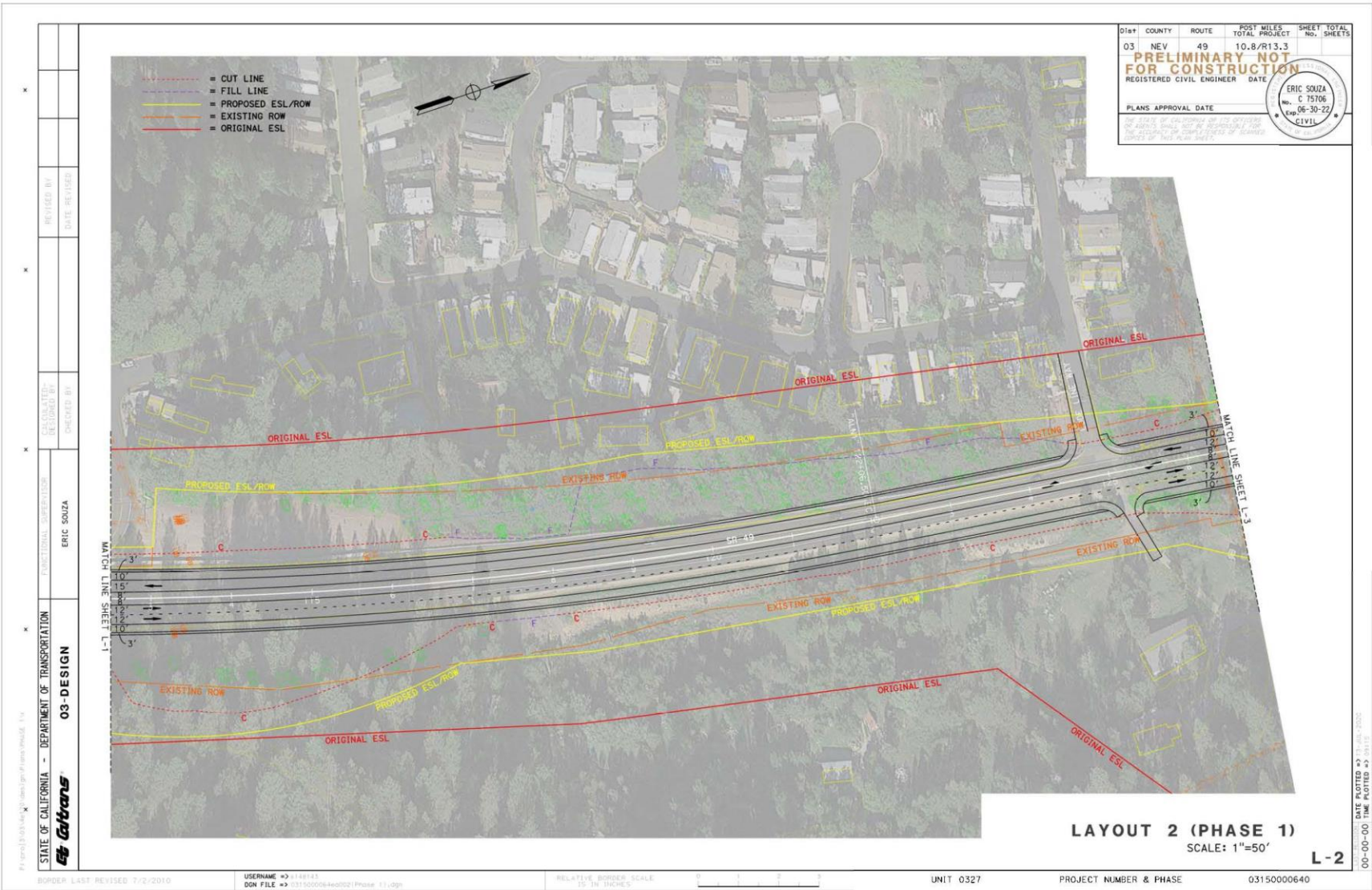
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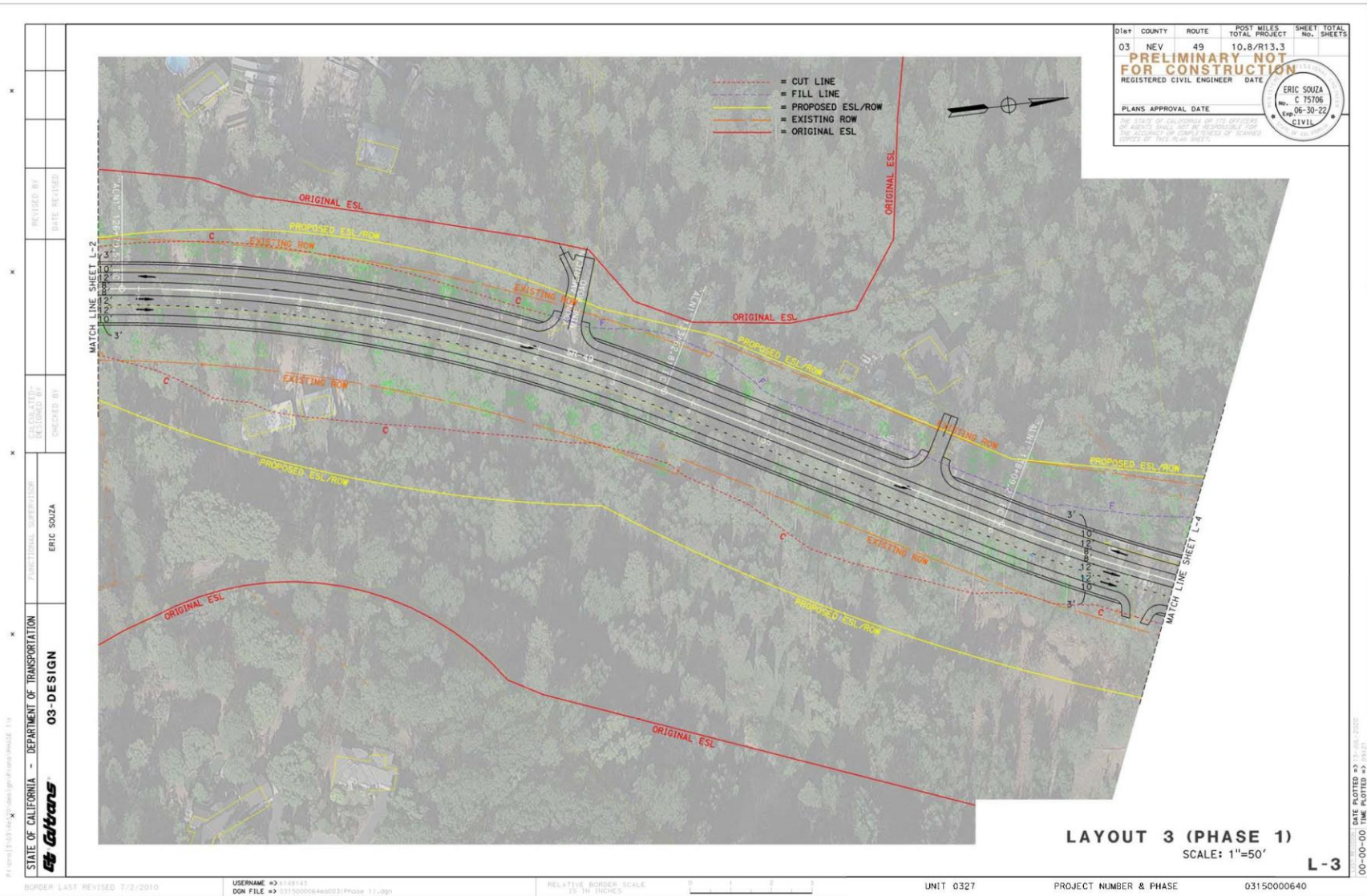
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 Exp. 06-30-22
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 TIME PLOTTED => 09:10





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DESIGNED BY ERIC SOUZA	CHECKED BY	DATE REVISION
DESIGNED BY ERIC SOUZA	CHECKED BY	DATE REVISION

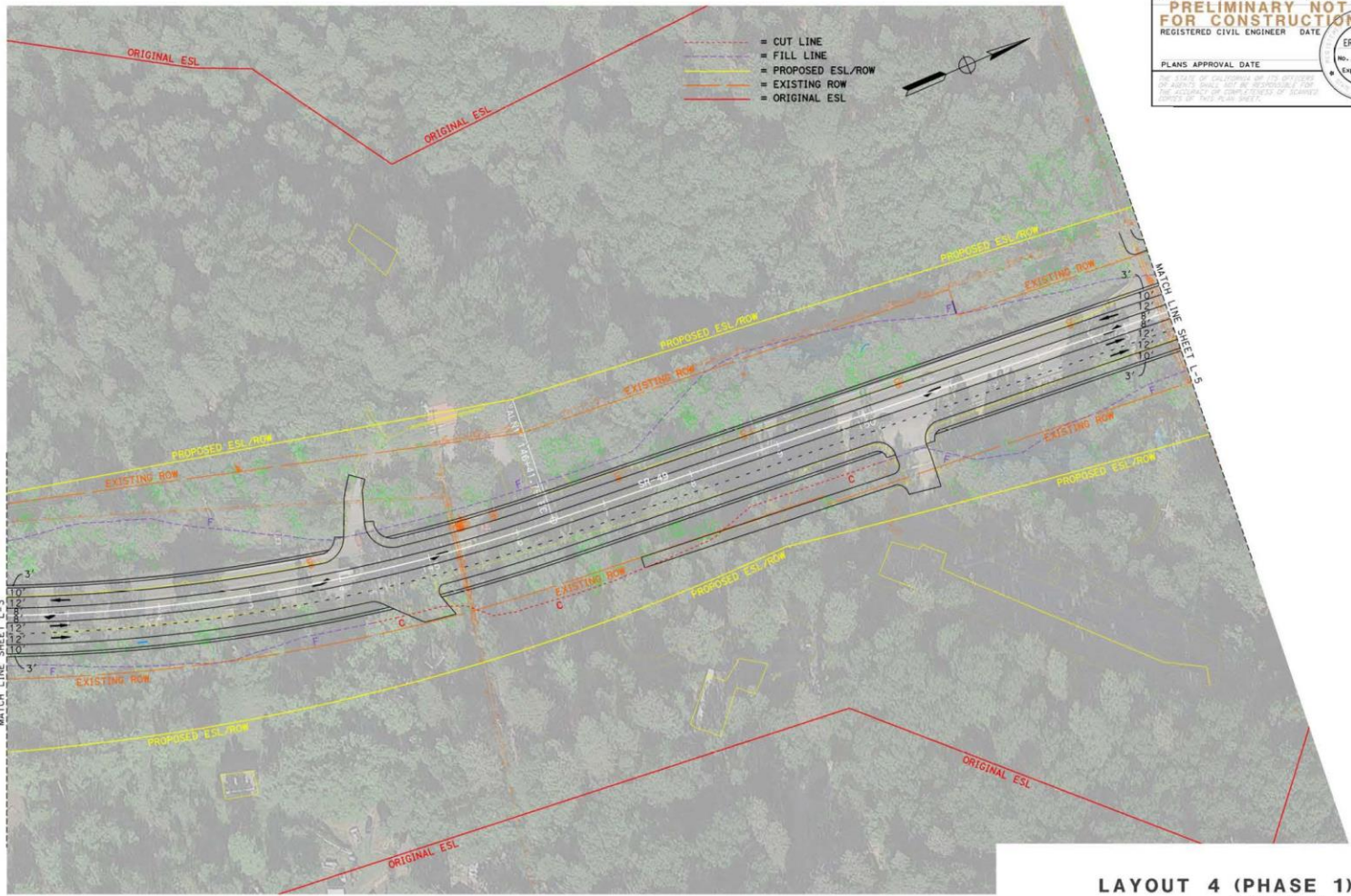
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LAYOUT 3 (PHASE 1)
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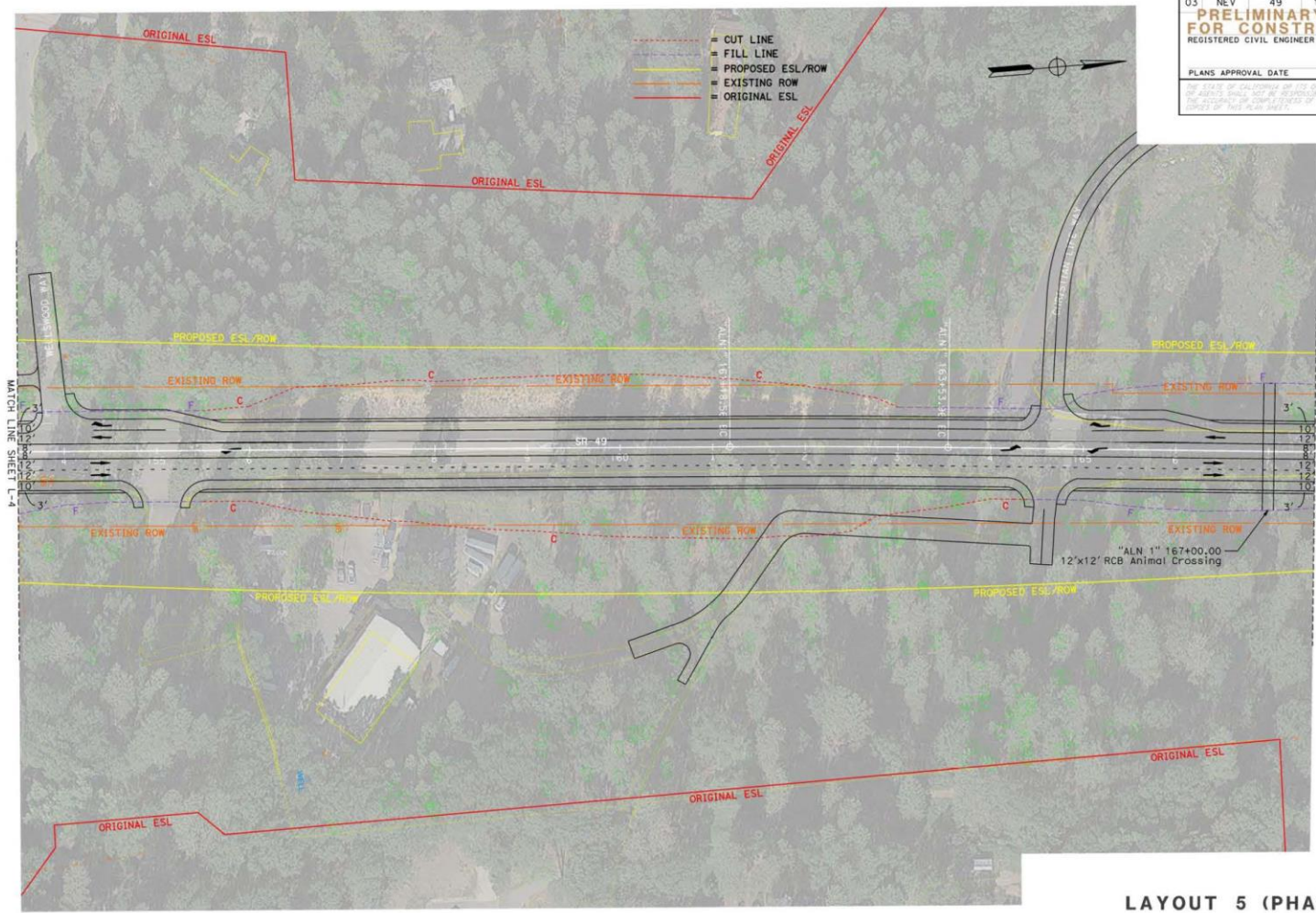
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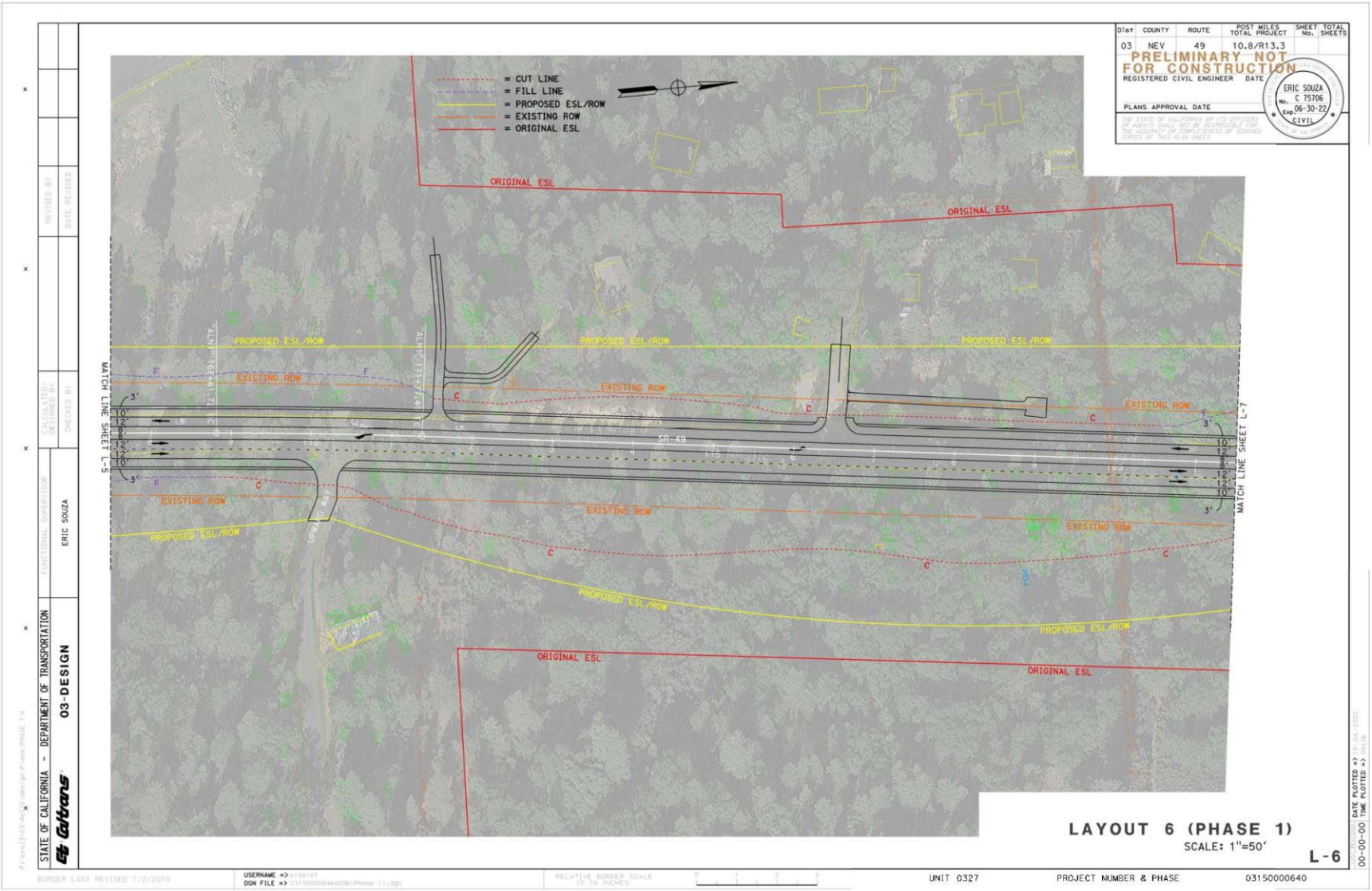
PLANS APPROVAL DATE

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 DIVISION OF CALIFORNIA HIGHWAYS
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LAYOUT 5 (PHASE 1)
 SCALE: 1"=50'
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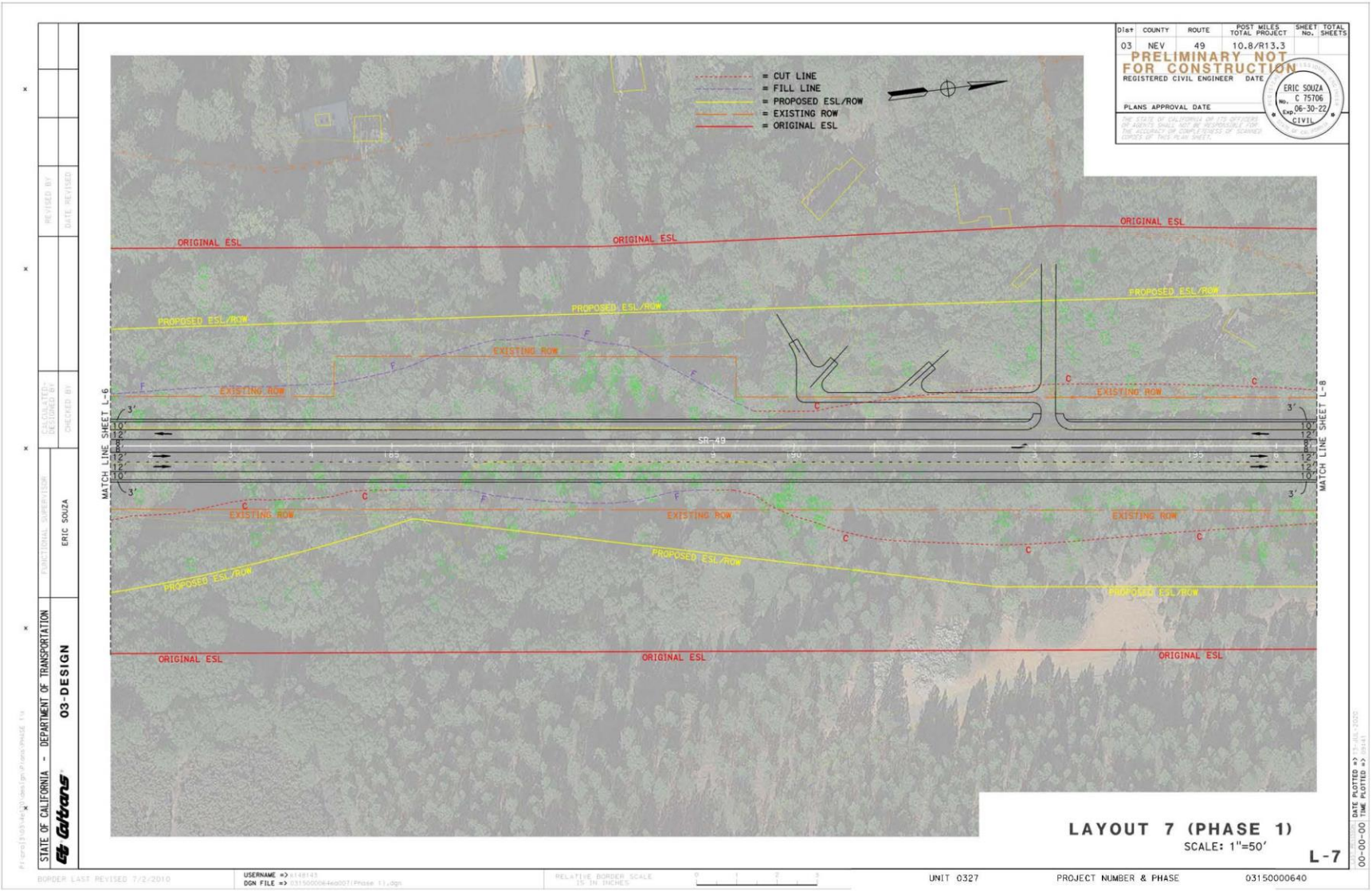
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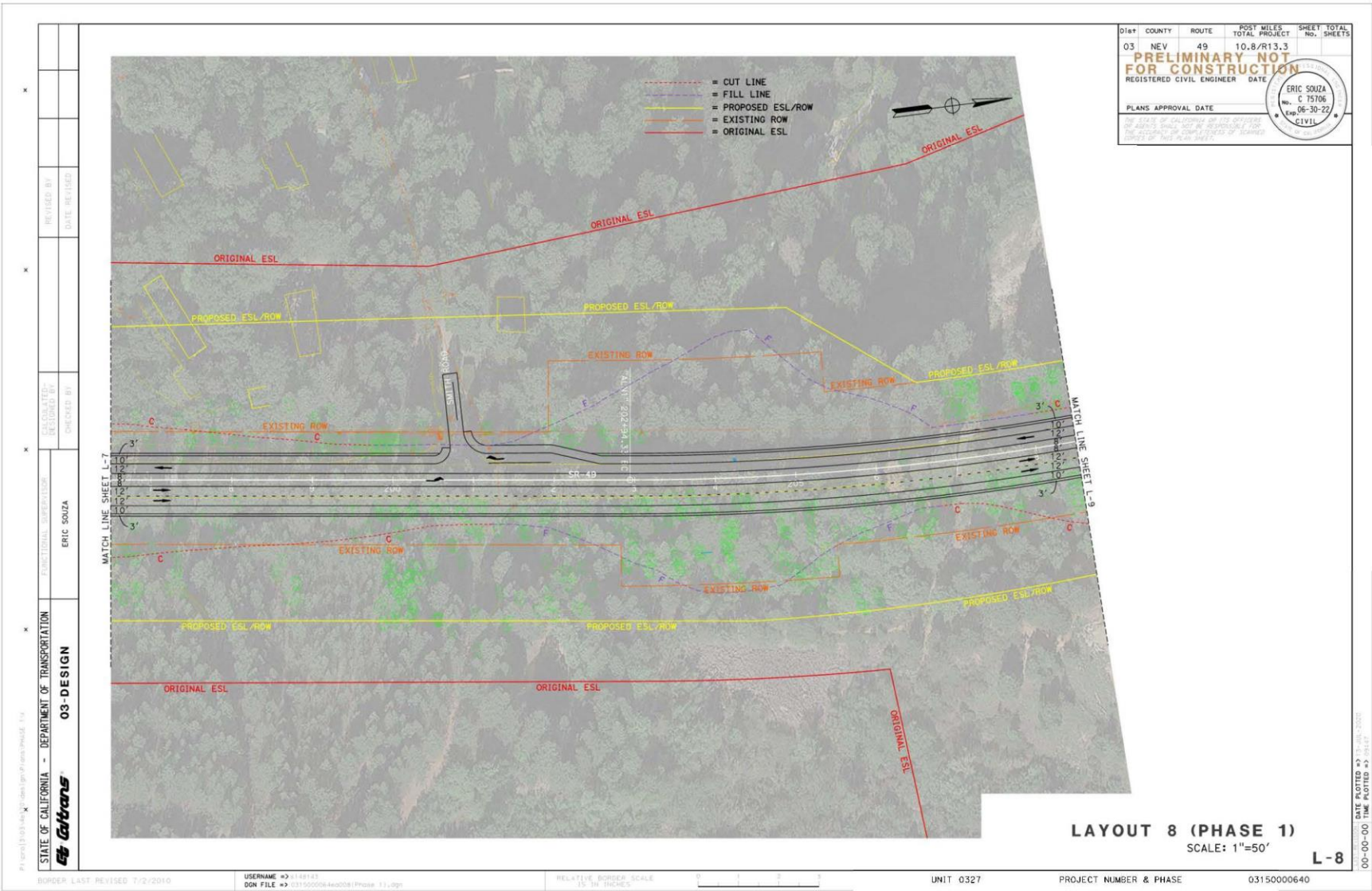
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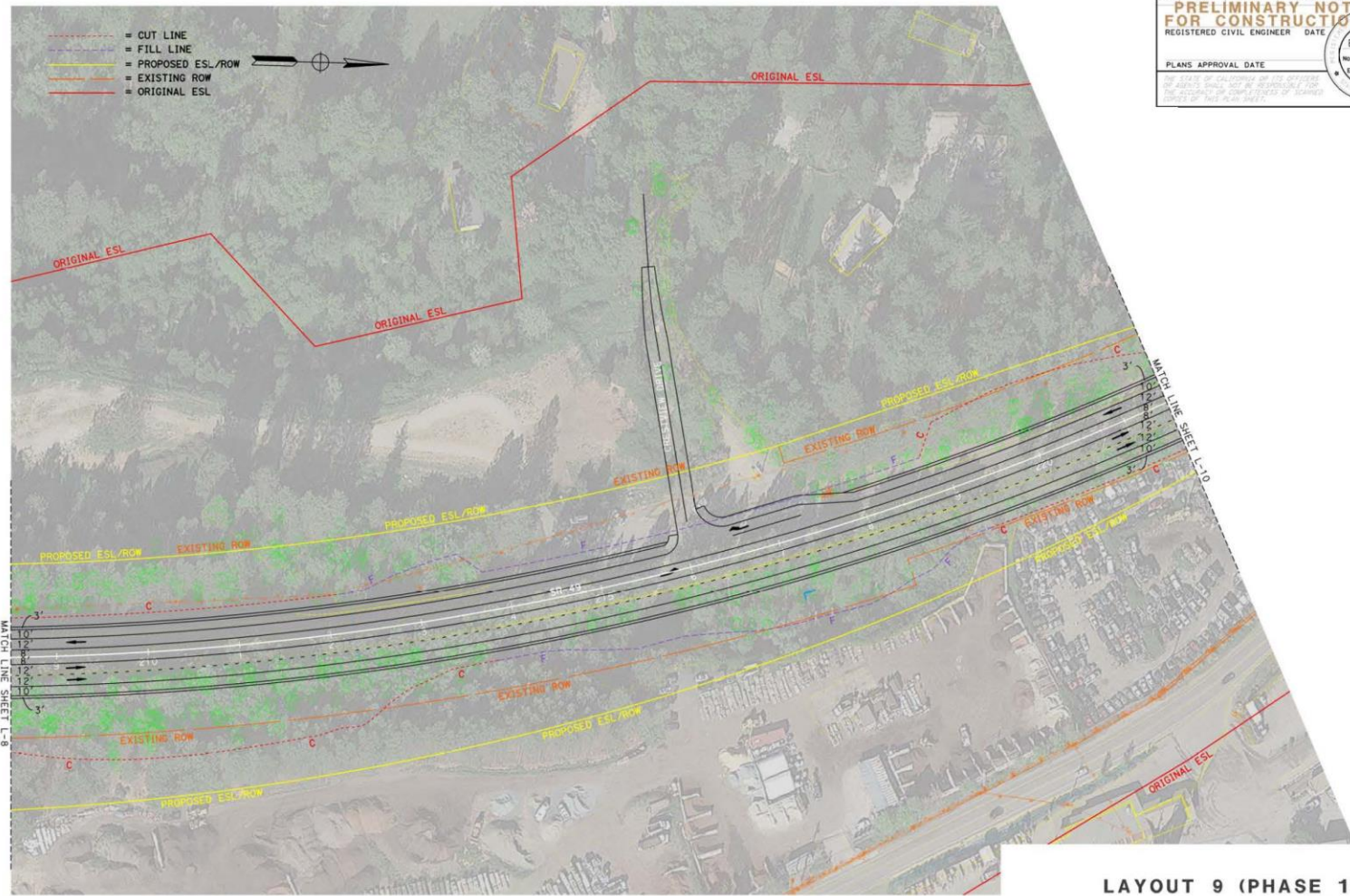


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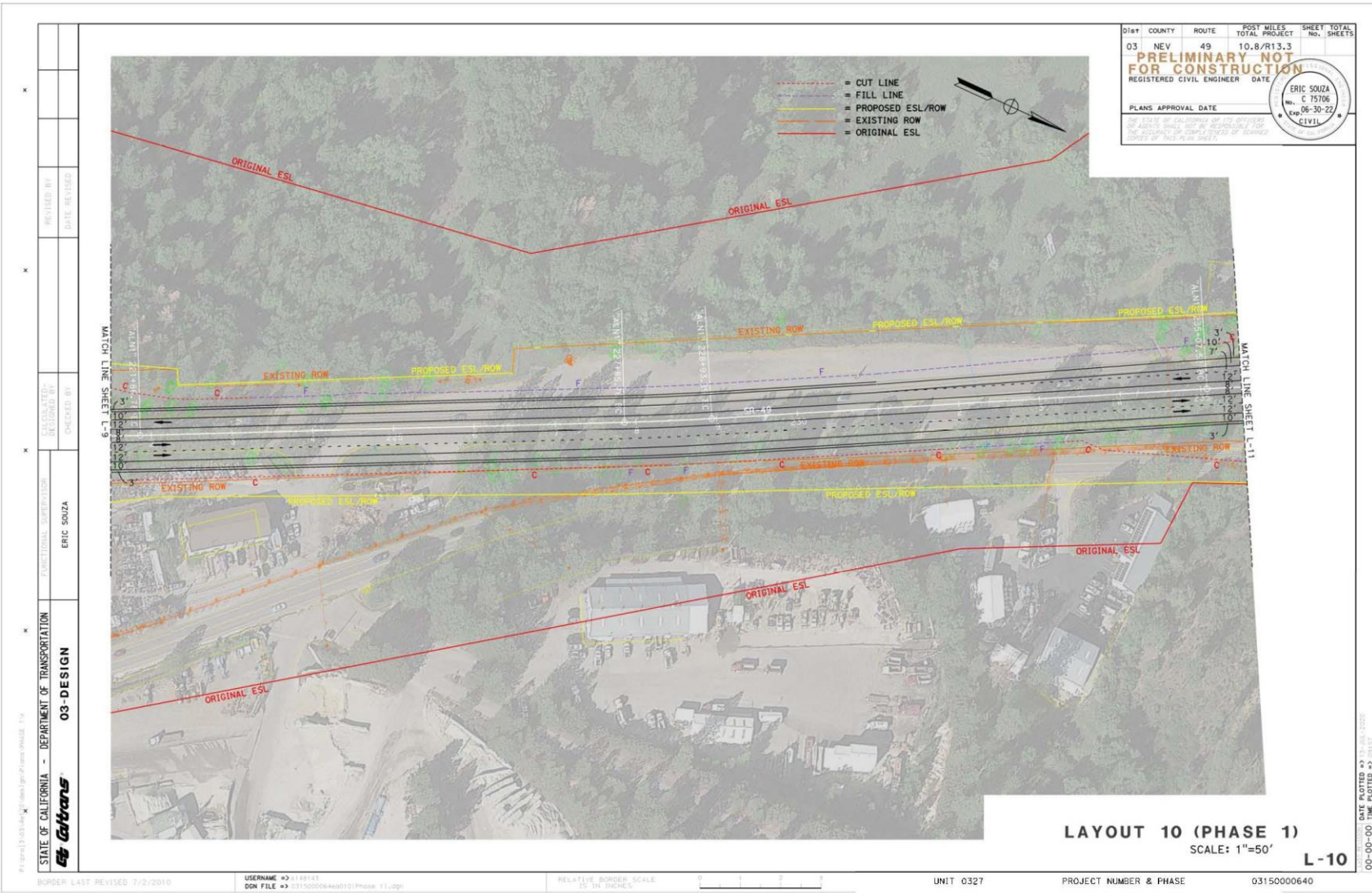
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LAYOUT 9 (PHASE 1)
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 Eric Souza
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LAYOUT 10 (PHASE 1)
 SCALE: 1"=50'
L-10

FUNCTIONAL SUPERVISOR	ERIC SOUZA
CHECKED BY	ERIC SOUZA
DESIGNED BY	DONOVAN PARKER
REVISIONS	DATE

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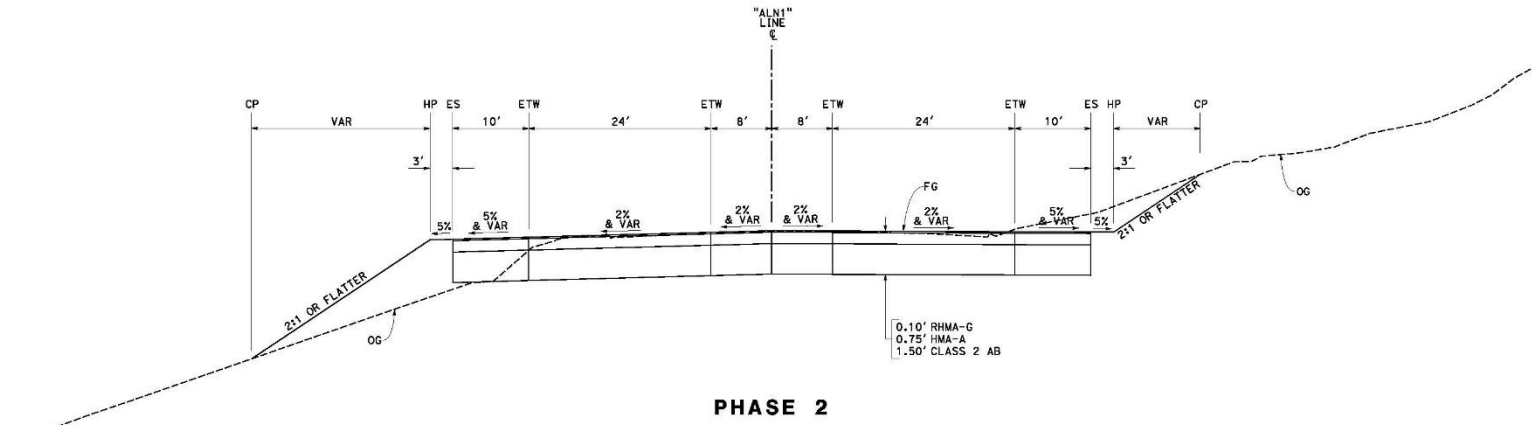
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No. 06-30-22
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NO SCALE

X-2

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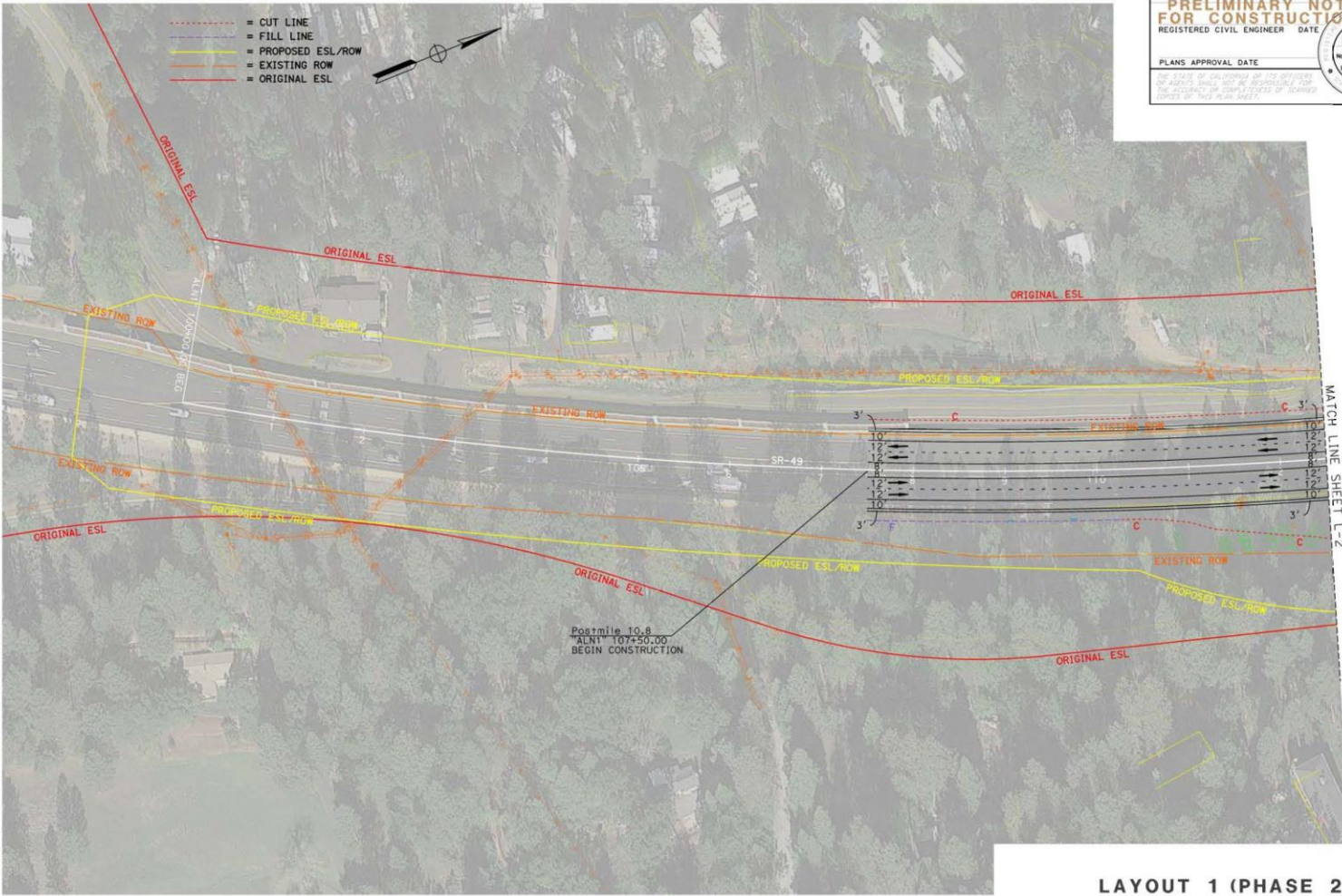
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UNIT 0327

PROJECT NUMBER & PHASE

0315000640

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03-DESIGN
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET TOTAL No. SHEETS
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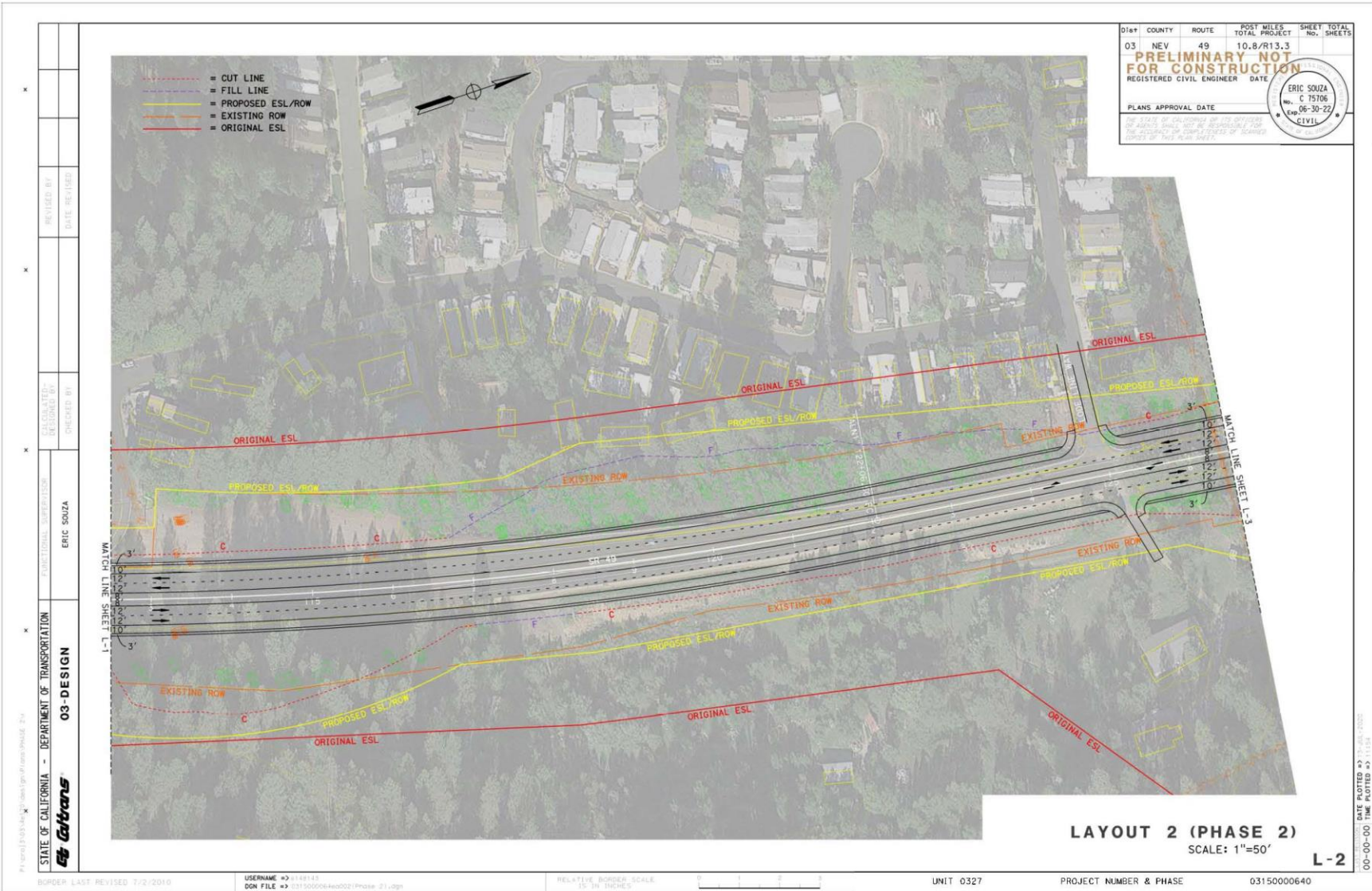
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PLANS APPROVAL DATE

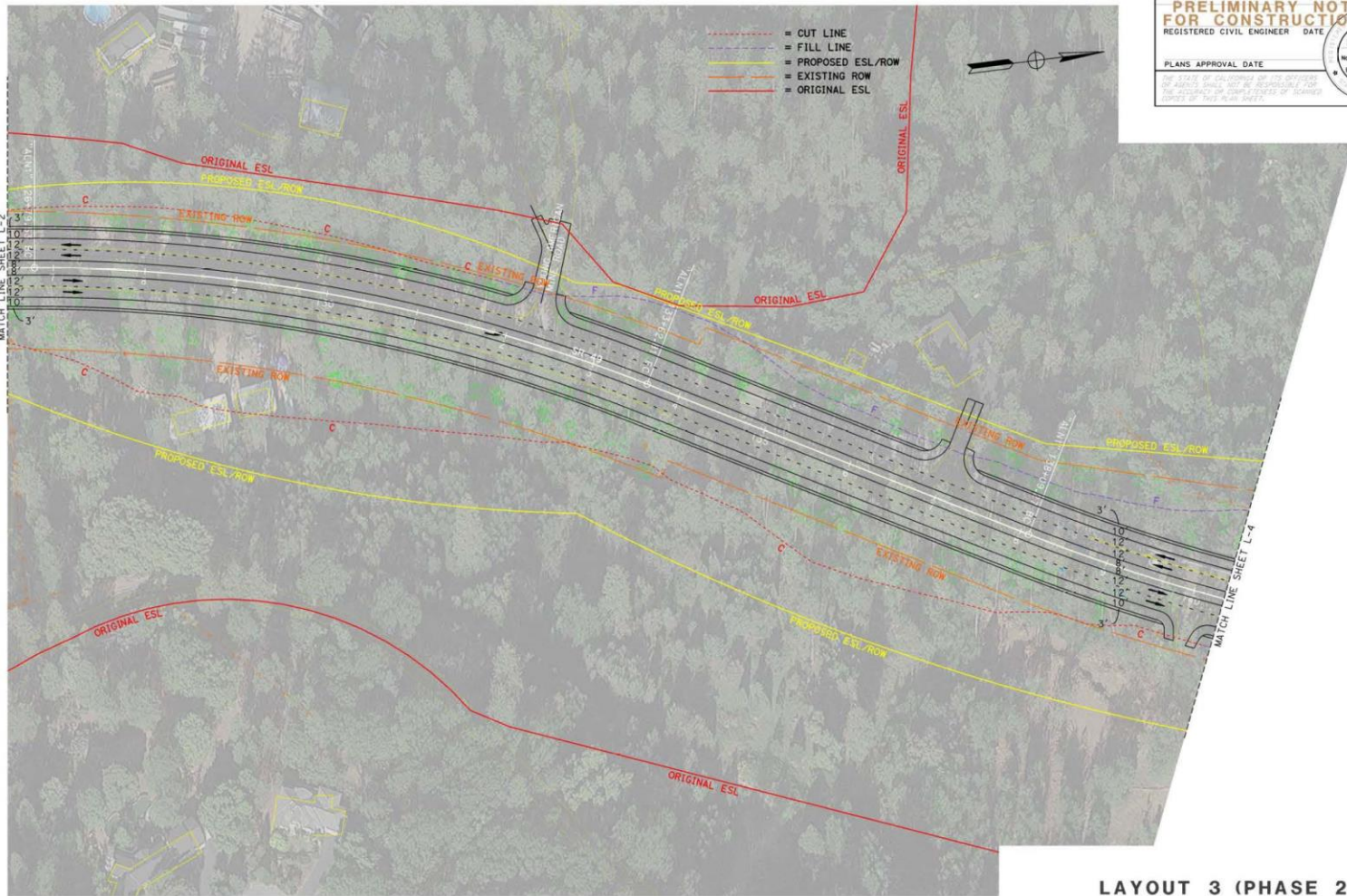
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 CHECKED BY:
 DATE REVISION:



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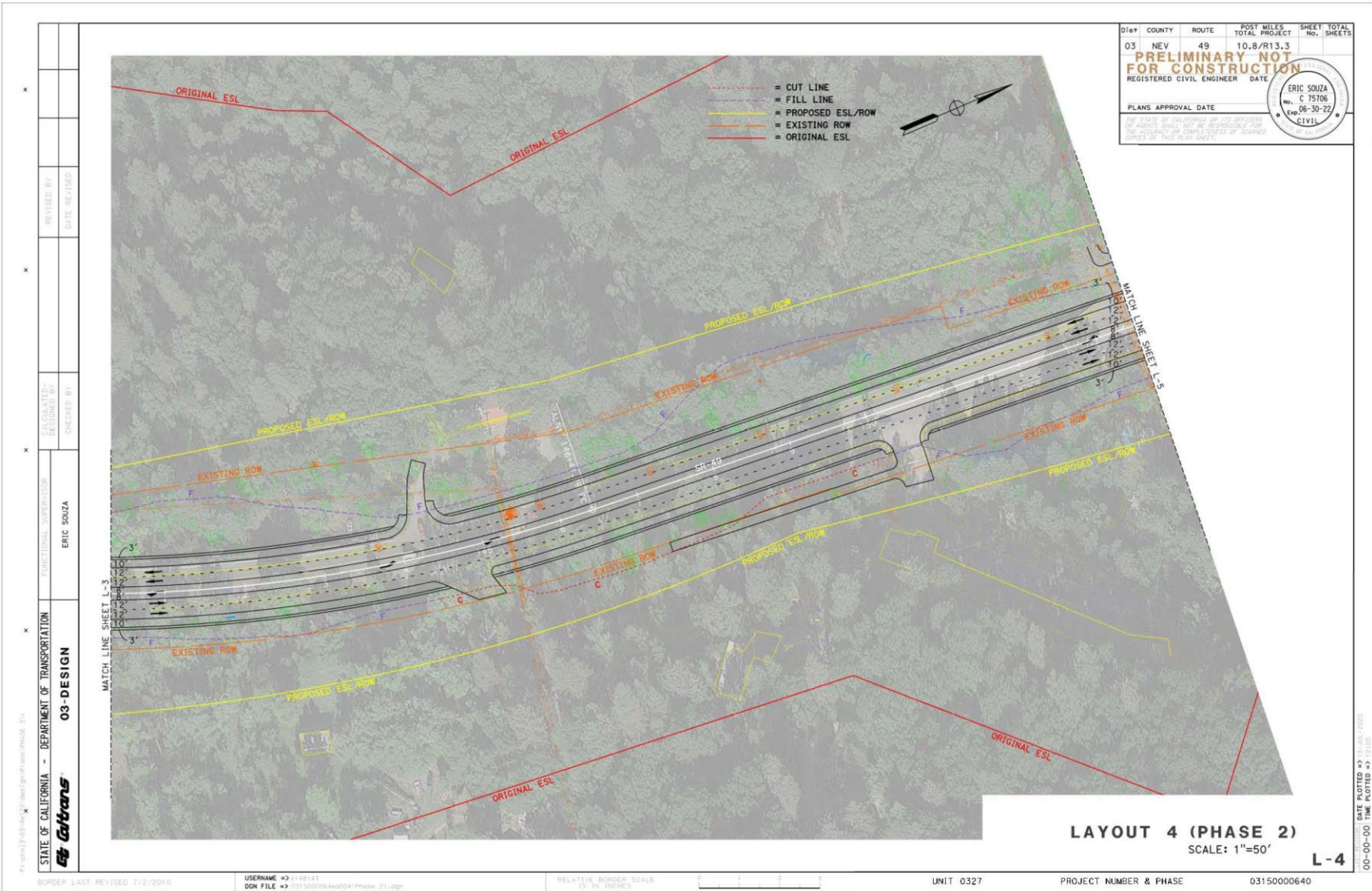
PRELIMINARY NOT FOR CONSTRUCTION
 REGISTERED CIVIL ENGINEER DATE
 ERIC SOUZA
 No. C 75706
 Exp. 06-30-22
 CIVIL

PLANS APPROVAL DATE

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LAYOUT 3 (PHASE 2)
 SCALE: 1"=50'
L-3

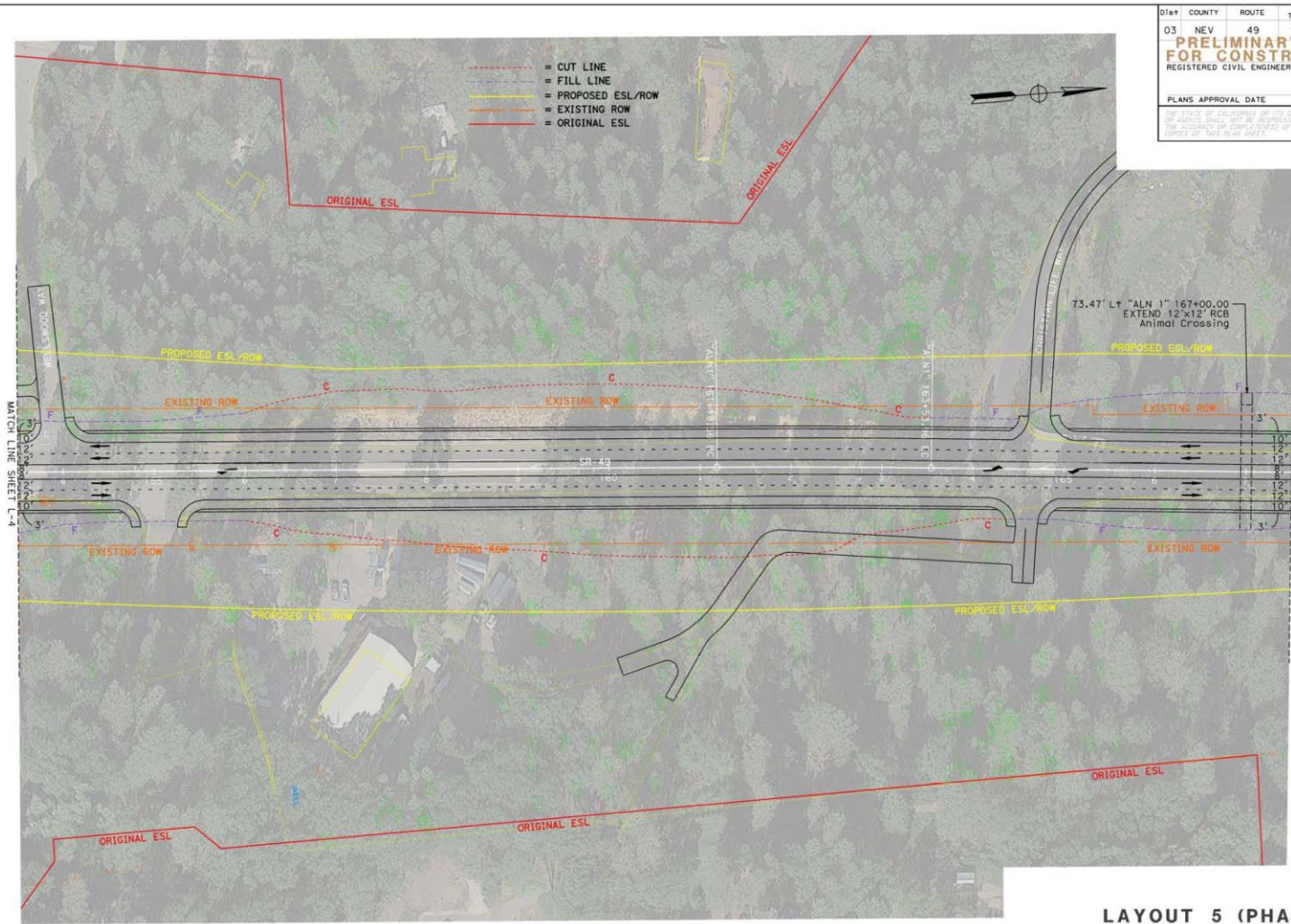
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 TIME PLOTTED: 11:08



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
03-DESIGN
 Eric Soouza

BORDER LAST REVISED 7/2/2010 USERNAME => e188133 RELATIVE BORDER SCALE 15 TH INCHES UNIT 0327 PROJECT NUMBER & PHASE 03150000640

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Eric Soza
 PUBLIC WORKS DIVISION
 03-DESIGN
 Eric Soza
 CHECKED BY: ERIC SOUZA
 REVIEWED BY: DATE REVISION:



Dist#	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NEV	49	10.8/R13.3		

PRELIMINARY NOT FOR CONSTRUCTION
 REGISTERED CIVIL ENGINEER DATE
 ERIC SOUZA
 No. C 75706
 Exp. 06-30-22
 CIVIL

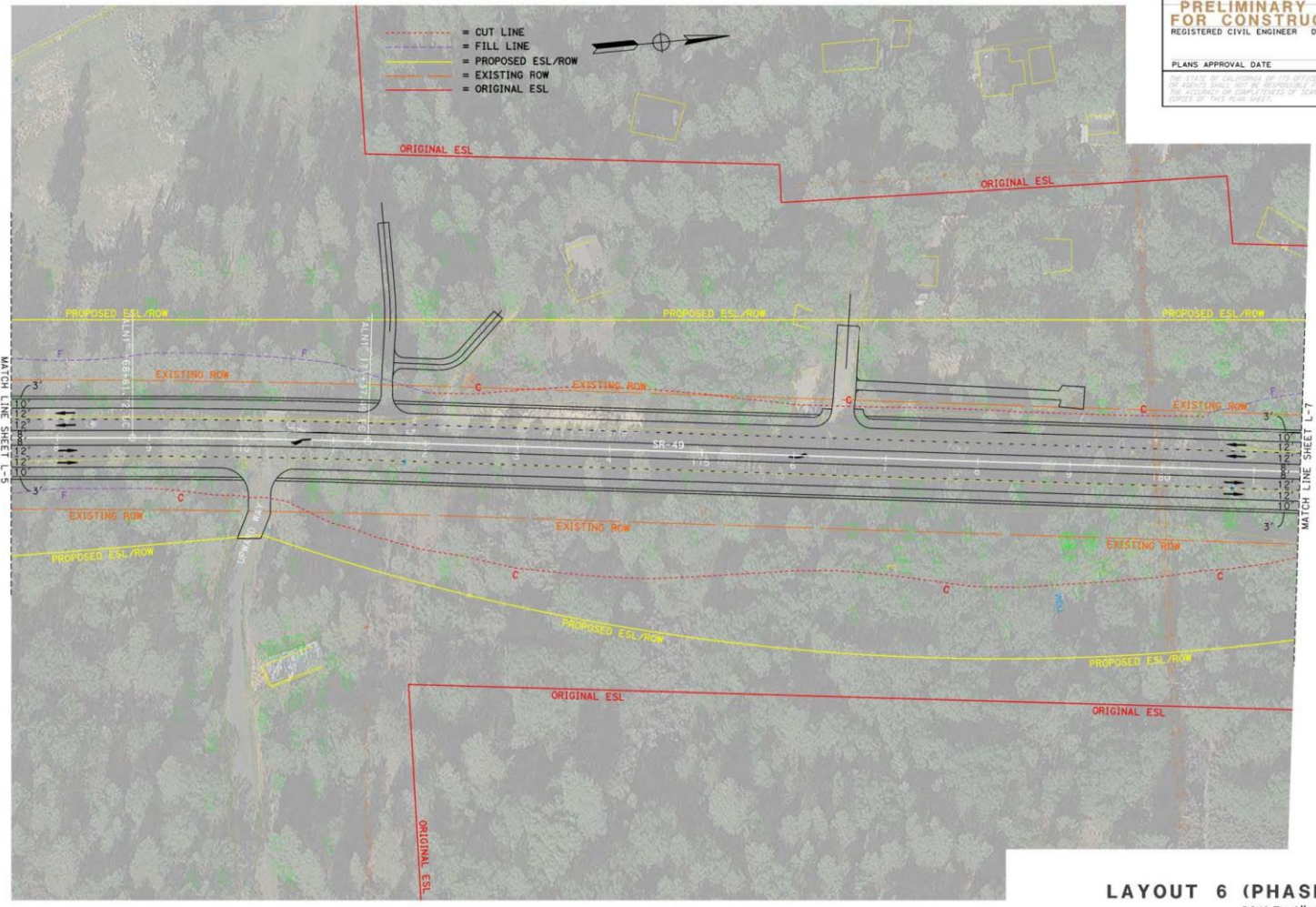
PLANS APPROVAL DATE

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LAYOUT 5 (PHASE 2)
 SCALE: 1"=50'
L-5

00-00-00 TIME PLOTTED 02:13:05

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 03-DESIGN
 ERIC SOUZA
 PUBLIC WORKS SUPERVISOR
 CHECKED BY: ERIC SOUZA
 DESIGNED BY: ERIC SOUZA
 REVISIONS:



DIST#	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NEV	49	10.8/R13.3		

PRELIMINARY NOT FOR CONSTRUCTION
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PLANS APPROVAL DATE
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LAYOUT 6 (PHASE 2)
 SCALE: 1"=50'
L-6

DATE PLOTTED: 02/15/2023
 TIME PLOTTED: 13:15
 00-00-00

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Eric Soza
 03-DESIGN

BORDER LAST REVISED 7/2/2010

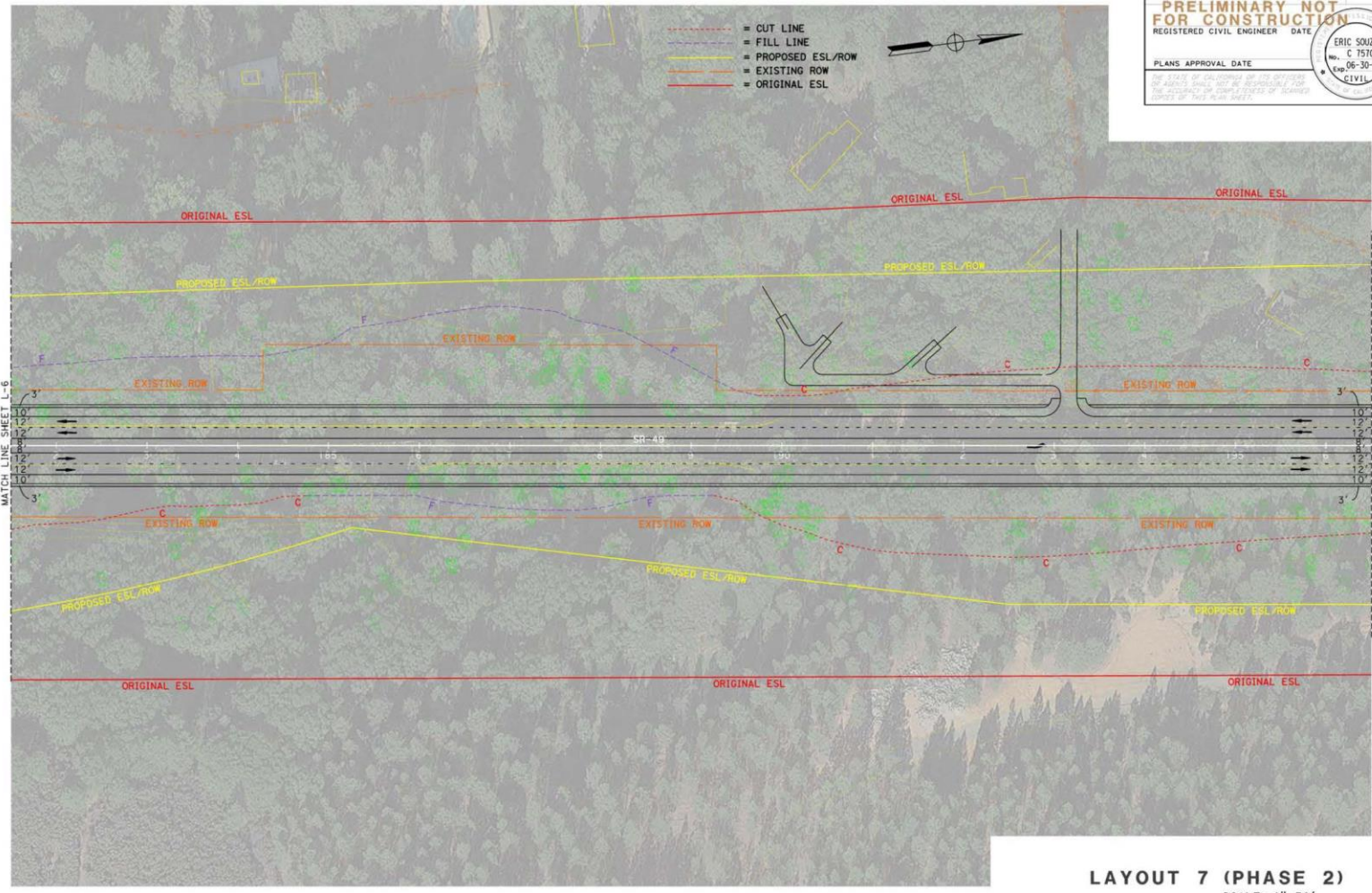
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RELATIVE BORDER SCALE
 15 IN INCHES

UNIT 0327

PROJECT NUMBER & PHASE

03150000640



DIST#	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NEV	49	10.8/R13.3		

PRELIMINARY NOT FOR CONSTRUCTION
 REGISTERED CIVIL ENGINEER DATE
 ERIC SOUZA
 No. C 75706
 Exp. 06-30-22
 CIVIL

PLANS APPROVAL DATE

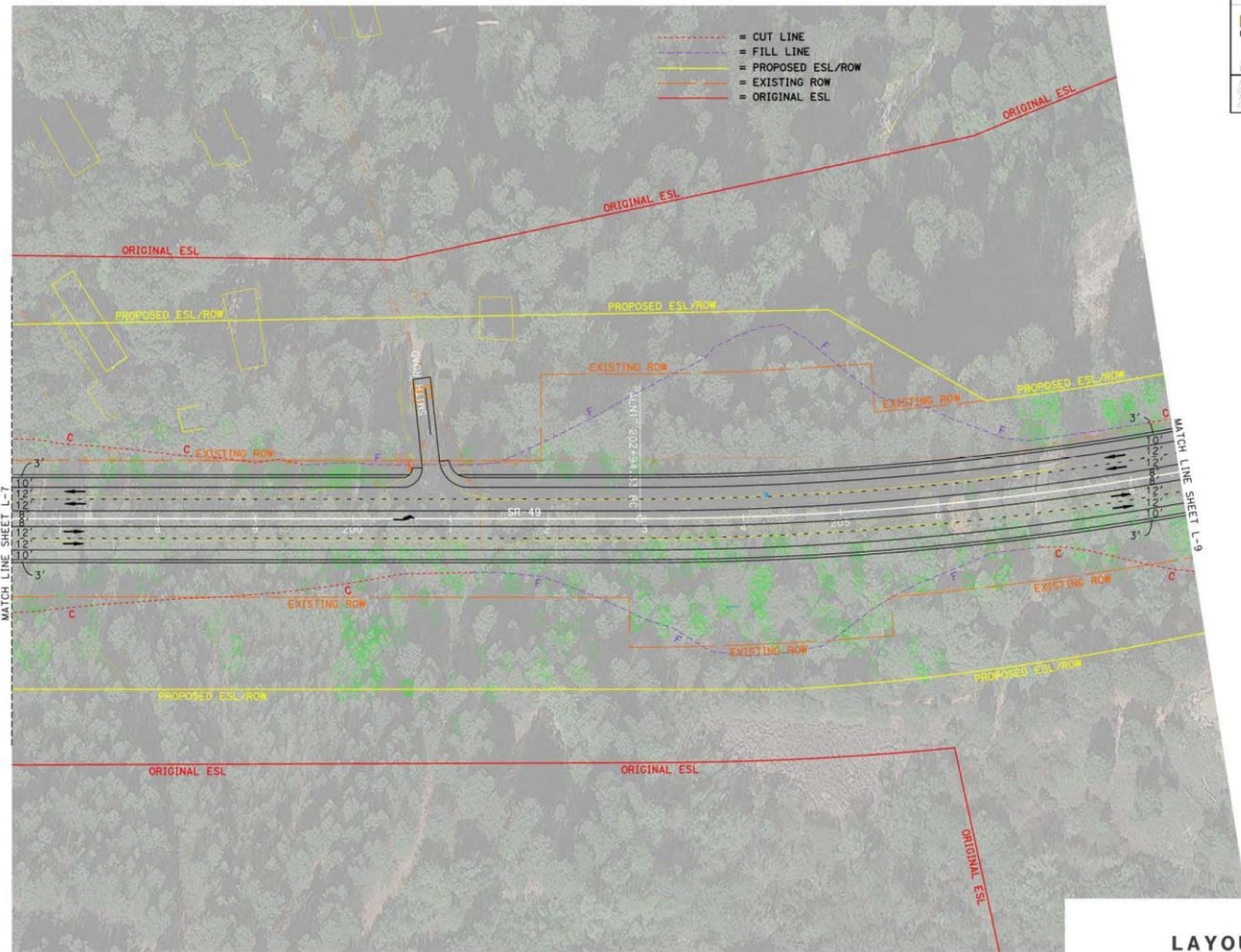
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LAYOUT 7 (PHASE 2)
 SCALE: 1"=50'

L-7

DATE PLOTTED => 06/28/2022
 TIME PLOTTED => 12:01

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Eric Gibbons
 03-DESIGN
 ERIC SOUZA
 PUBLIC WORKS SUPERVISOR
 CHECKED BY:
 DESIGNED BY:
 REVISIONS BY:
 DATE REVISIONS:



DIST#	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NEV	49	10.8/R13.3		

PRELIMINARY NOT FOR CONSTRUCTION
 REGISTERED CIVIL ENGINEER DATE

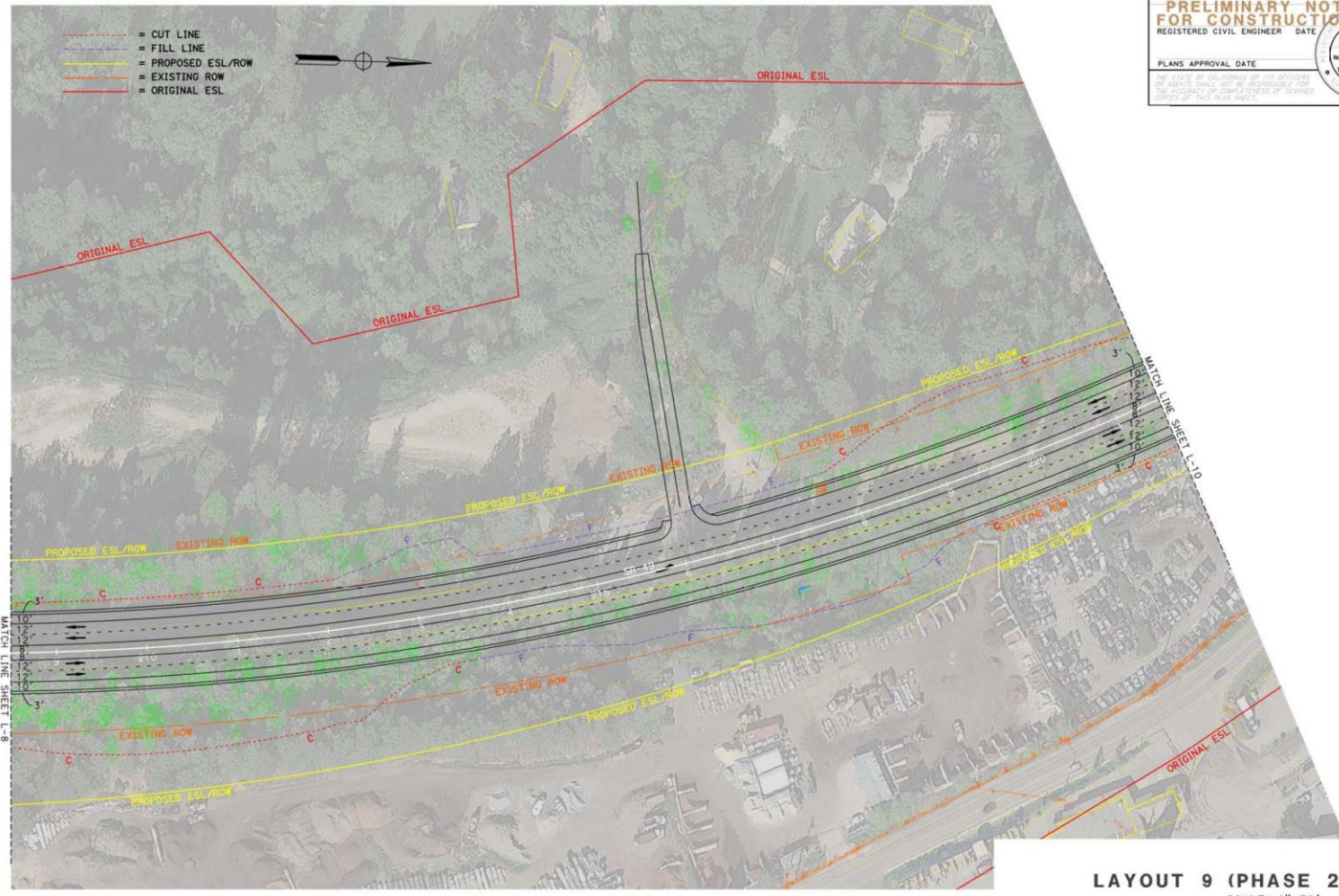
PLANS APPROVAL DATE

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 No. C 75706
 Exp. 06-30-22
 CIVIL

LAYOUT 8 (PHASE 2)
 SCALE: 1"=50'
L-8

DATE PLOTTED: 02/15/2024
 TIME PLOTTED: 13:05

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 03-DESIGN
 ERIC SOUZA
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 REVISIONS BY DATE REVISIONS



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NEV	49	10.8/R13.3		

PRELIMINARY NOT FOR CONSTRUCTION
 REGISTERED CIVIL ENGINEER DATE
 ERIC SOUZA
 No. C 75706
 Exp. 06-30-22
 CIVIL

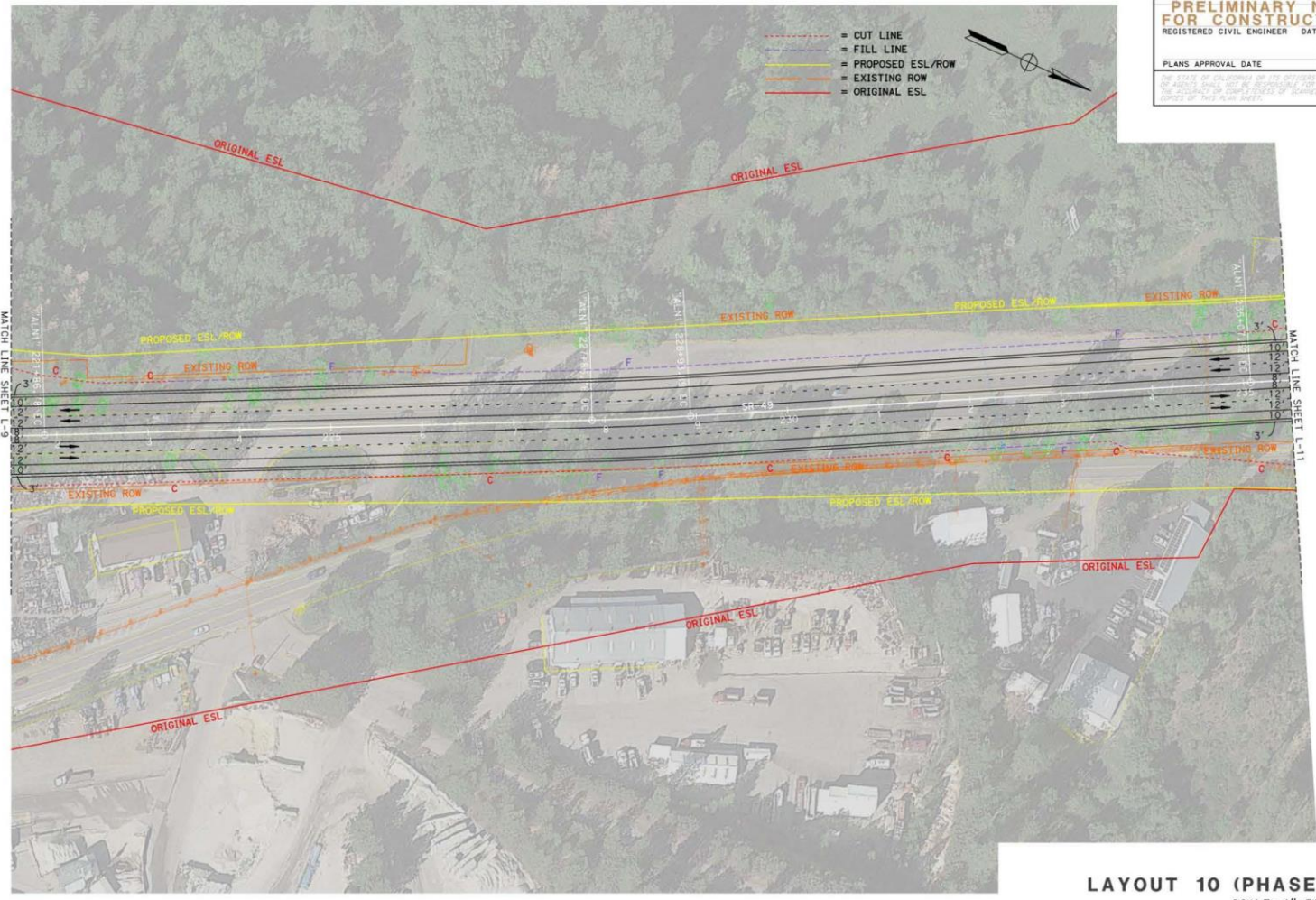
PLANS APPROVAL DATE

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LAYOUT 9 (PHASE 2)
 SCALE: 1"=50'
L-9

DATE PLOTTED: 02/21/2010
 TIME PLOTTED: 11:21:10

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Caltrans
 03-DESIGN
 PUBLIC WORKS SUPERVISOR
 ERIC SOUZA
 CHECKED BY:
 REVISIONS:
 DATE REVISIONS:
 REVISIONS:



DIST#	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NEV	49	10.8/R13.3		

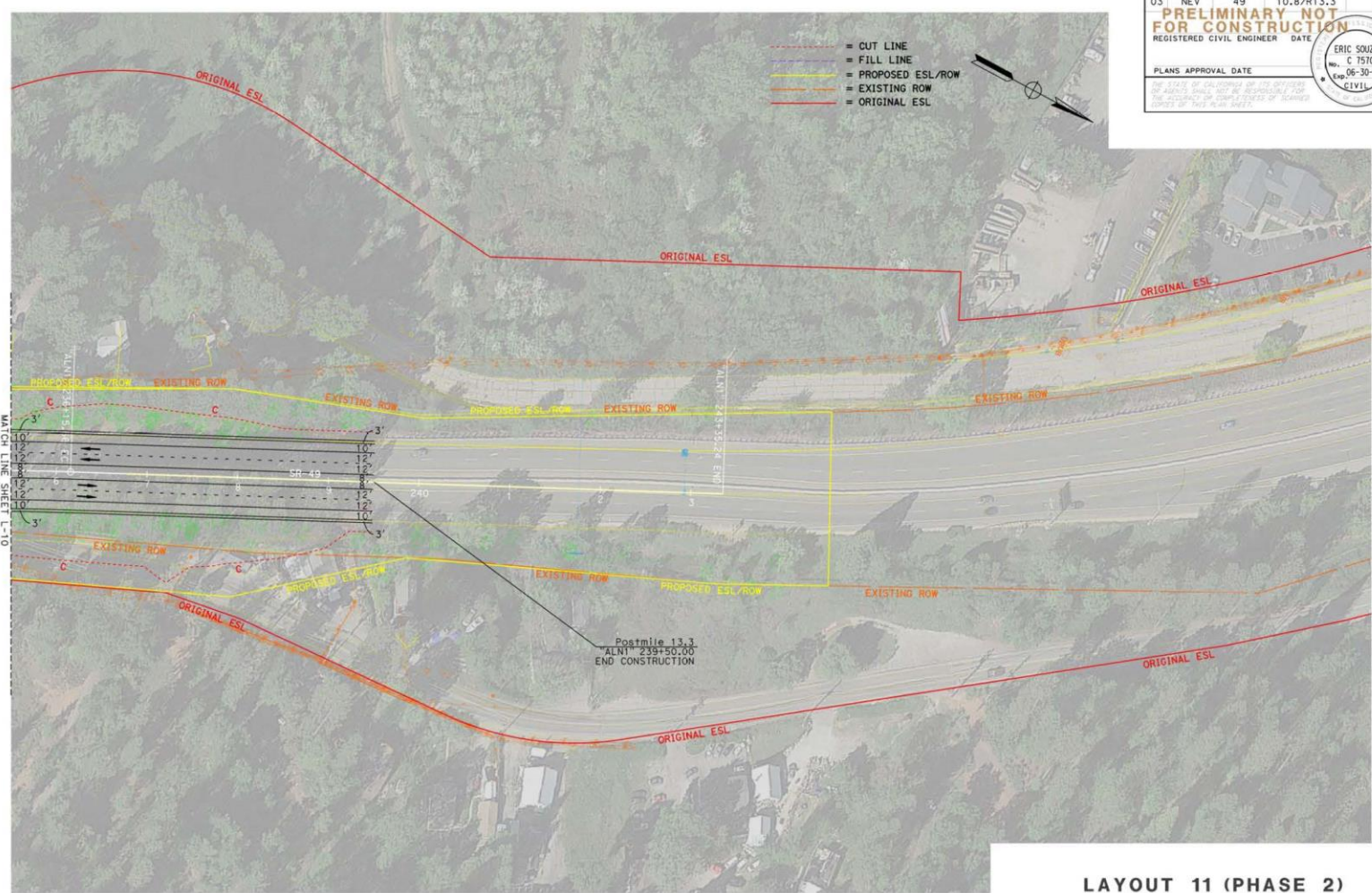
PRELIMINARY NOT FOR CONSTRUCTION
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 ERIC SOUZA
 No. C 75706
 Exp. 06-30-22
 CIVIL

PLANS APPROVAL DATE
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LAYOUT 10 (PHASE 2)
 SCALE: 1"=50'
L-10

DATE PLOTTED: 07/28/2020
 TIME PLOTTED: 12:15

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Gilbert
 03-DESIGN
 ERIC SOUZA
 CHECKED BY: ERIC SOUZA
 DESIGNED BY: ERIC SOUZA
 REVISIONS:
 DATE REVISIONS BY:
 DATE REVISIONS BY:



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NEV	49	10.8/R13.3		

PRELIMINARY NOT FOR CONSTRUCTION
 REGISTERED CIVIL ENGINEER DATE
 ERIC SOUZA No. C 75706 Exp. 06-30-22
 CIVIL

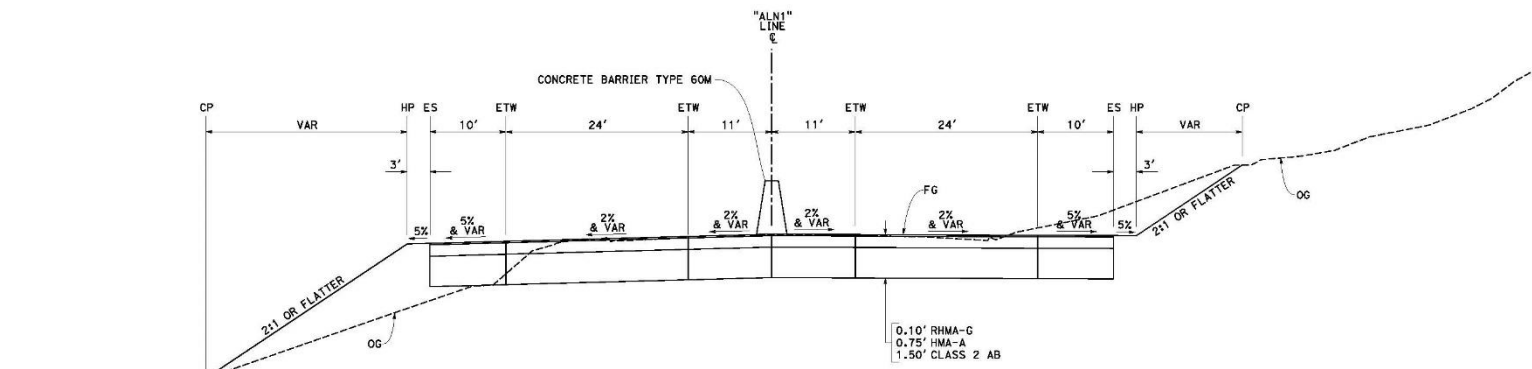
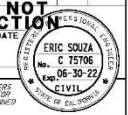
PLANS APPROVAL DATE

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LAYOUT 11 (PHASE 2)
 SCALE: 1"=50'
L-11

DATE PLOTTED: 03/11/2020 TIME PLOTTED: 11:48:00

Dist#	COUNTY	ROUTE	POST MILES	SHEET TOTAL
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PRELIMINARY NOT FOR CONSTRUCTION				
REGISTERED CIVIL ENGINEER			DATE	
ERIC SOUZA			No. C 75706	
PLANS APPROVAL DATE			06-30-22	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENCIES SHALL HAVE NO LIABILITY FOR THE ACCURACY OR COMPLETENESS OF DRAWN COPIES OF THIS PLAN SHEET.</small>				



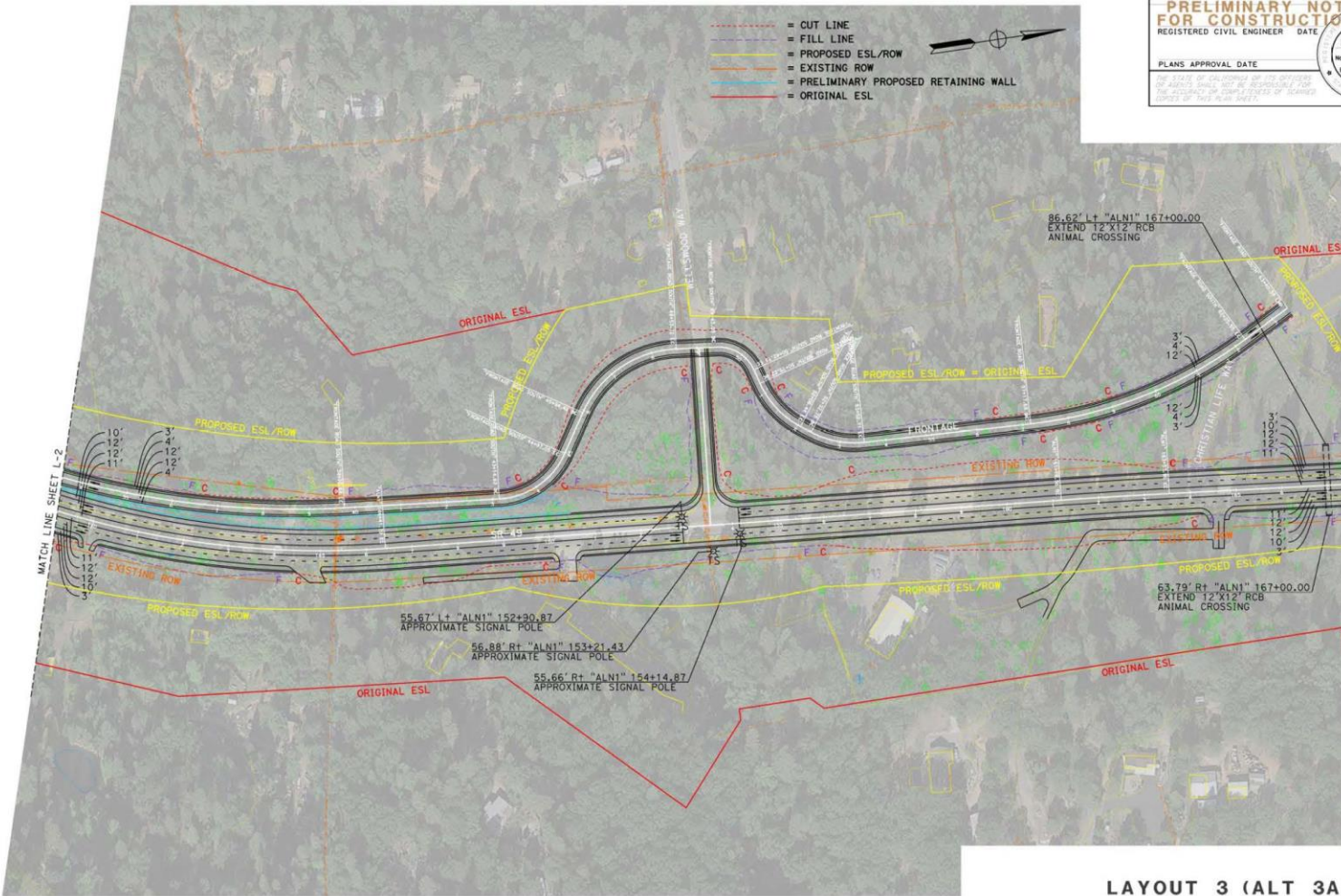
ALTERNATIVE 3A and 3B

TYPICAL CROSS SECTIONS
NO SCALE

X-3

DESIGNED BY	REVISOR	DATE
CHECKED BY	REVISOR	DATE
FUNCTIONAL SUPERVISOR	DESIGNED BY	DATE
ERIC SOUZA	ERIC SOUZA	
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION 03-DESIGN		

PROJECT TOTAL: 031500006-000031.ALT 3A.dgn
 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 03-DESIGN
 ERIC SOUZA
 CHECKED BY:
 DESIGNED BY:
 REVISIONS:



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NEV	49	10.8/13.3		

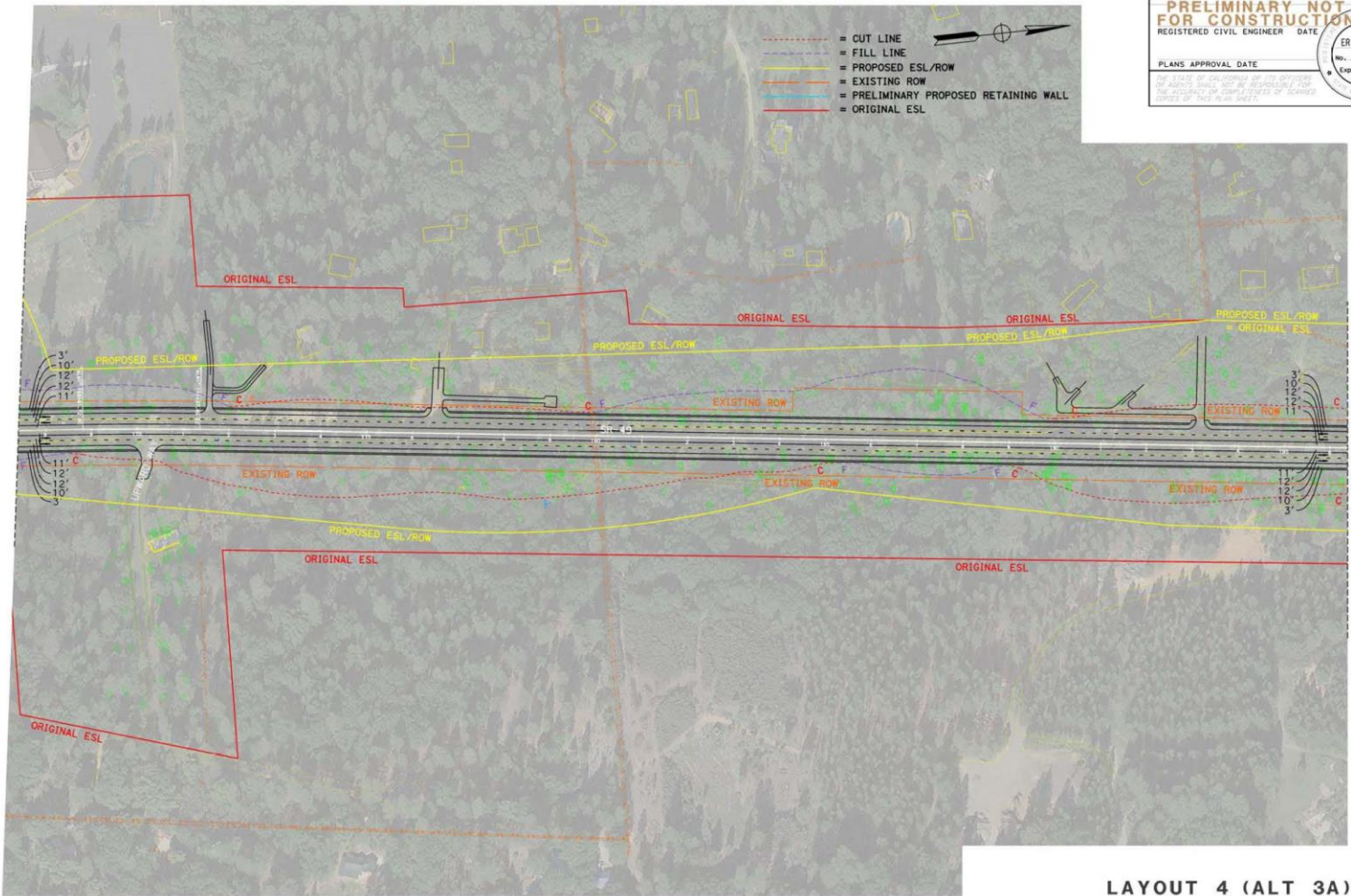
PRELIMINARY NOT FOR CONSTRUCTION
 REGISTERED CIVIL ENGINEER DATE
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 CIVIL

PLANS APPROVAL DATE

LAYOUT 3 (ALT 3A)
 SCALE: 1"=100'
L-3

DATE PLOTTED: 02/15/2020
 TIME PLOTTED: 02:15:04

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
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 ERIC SOUZA
 CHECKED BY:
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 REVISIONS:
 REVISION BY:
 DATE REVISIONED:



DIST#	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NEV	49	10.8/13.3		

PRELIMINARY NOT FOR CONSTRUCTION
 REGISTERED CIVIL ENGINEER DATE
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LAYOUT 4 (ALT 3A)
 SCALE: 1"=100'
L-4

00-00-00 TIME PLOTTED 02/15/2020 10:51:01

- - - - - CUT LINE
- - - - - FILL LINE
- - - - - PROPOSED ESL/ROW
- - - - - EXISTING ROW
- - - - - PRELIMINARY PROPOSED RETAINING WALL
- - - - - ORIGINAL ESL

Dist#	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NEV	49	10.8/13.3		

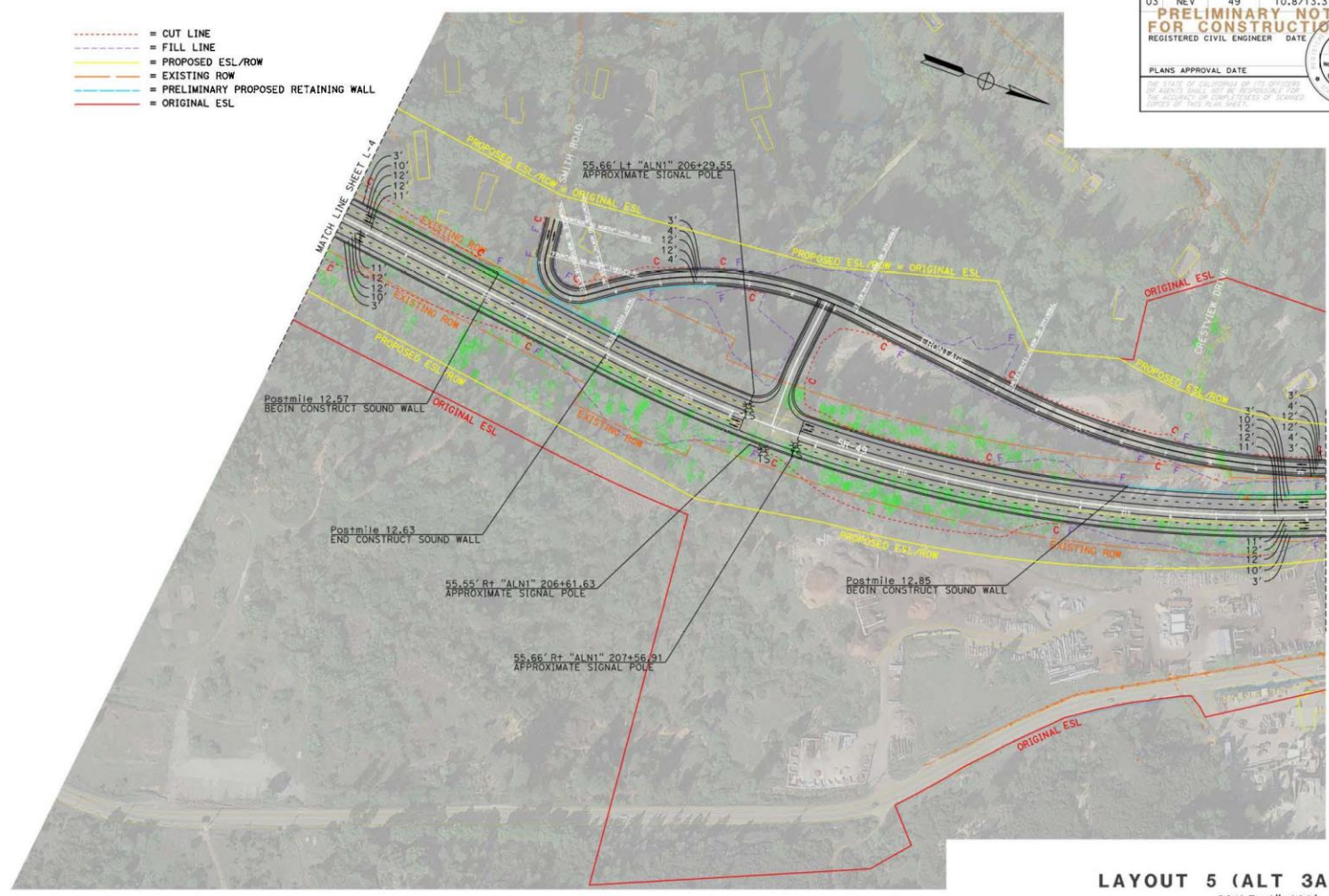
PRELIMINARY NOT FOR CONSTRUCTION

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

ERIC SOUZA
No. C 75706
Exp. 06-30-22
CIVIL

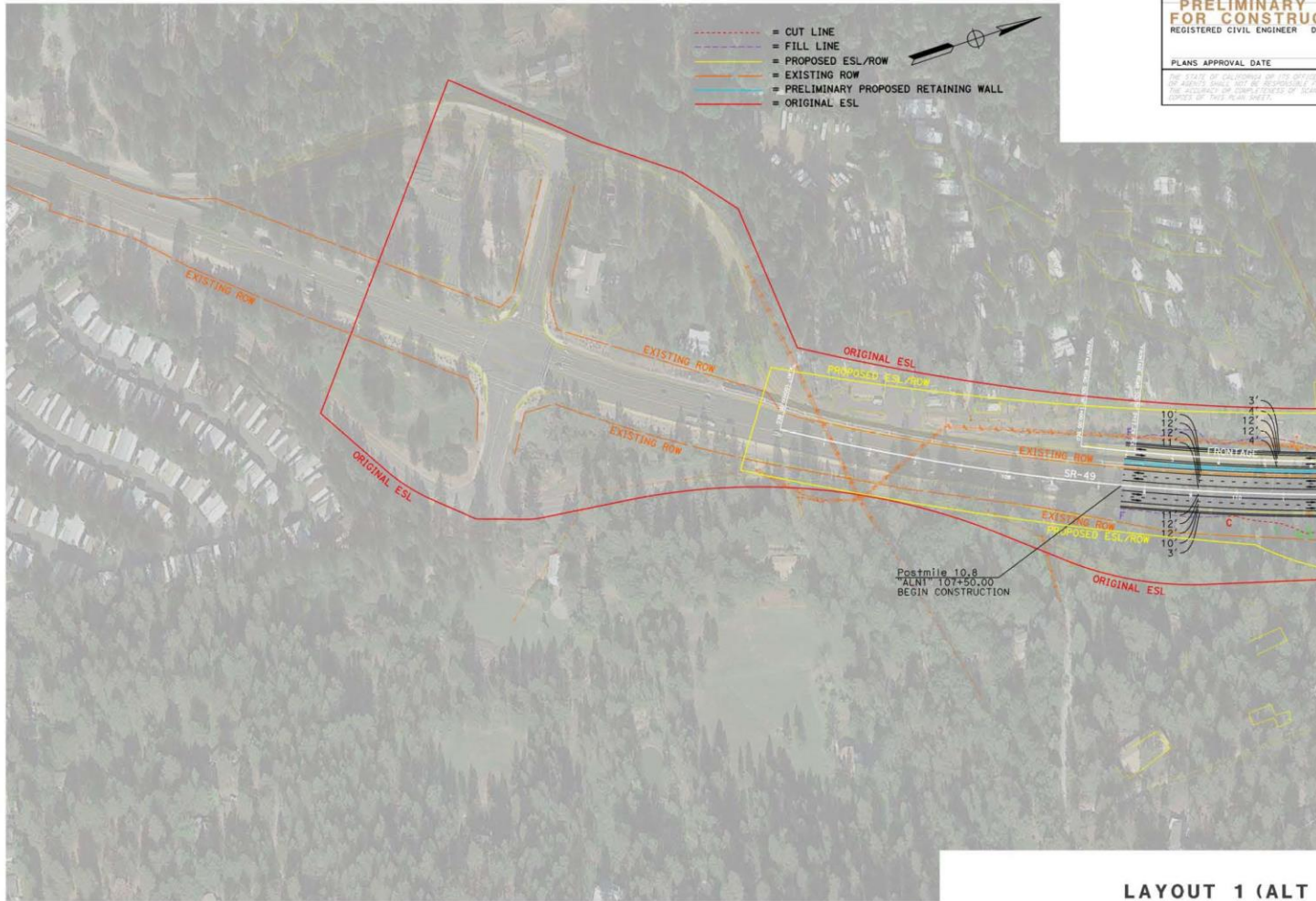
I am the Designer of Record for this project. I am responsible for the accuracy of the plans and the safety of the project. I am not responsible for the accuracy of the data provided to me by others.



LAYOUT 5 (ALT 3A)
SCALE: 1"=100'
L-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Eric Souza
 03-DESIGN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 03-DESIGN
 PUBLIC UTILITIES DIVISION
 ERIC SOUZA
 CHECKED BY:
 DESIGNED BY:
 REVISIONS:
 DATE REVISIONS BY:



DIST#	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NEV	49	10.8/13.3		

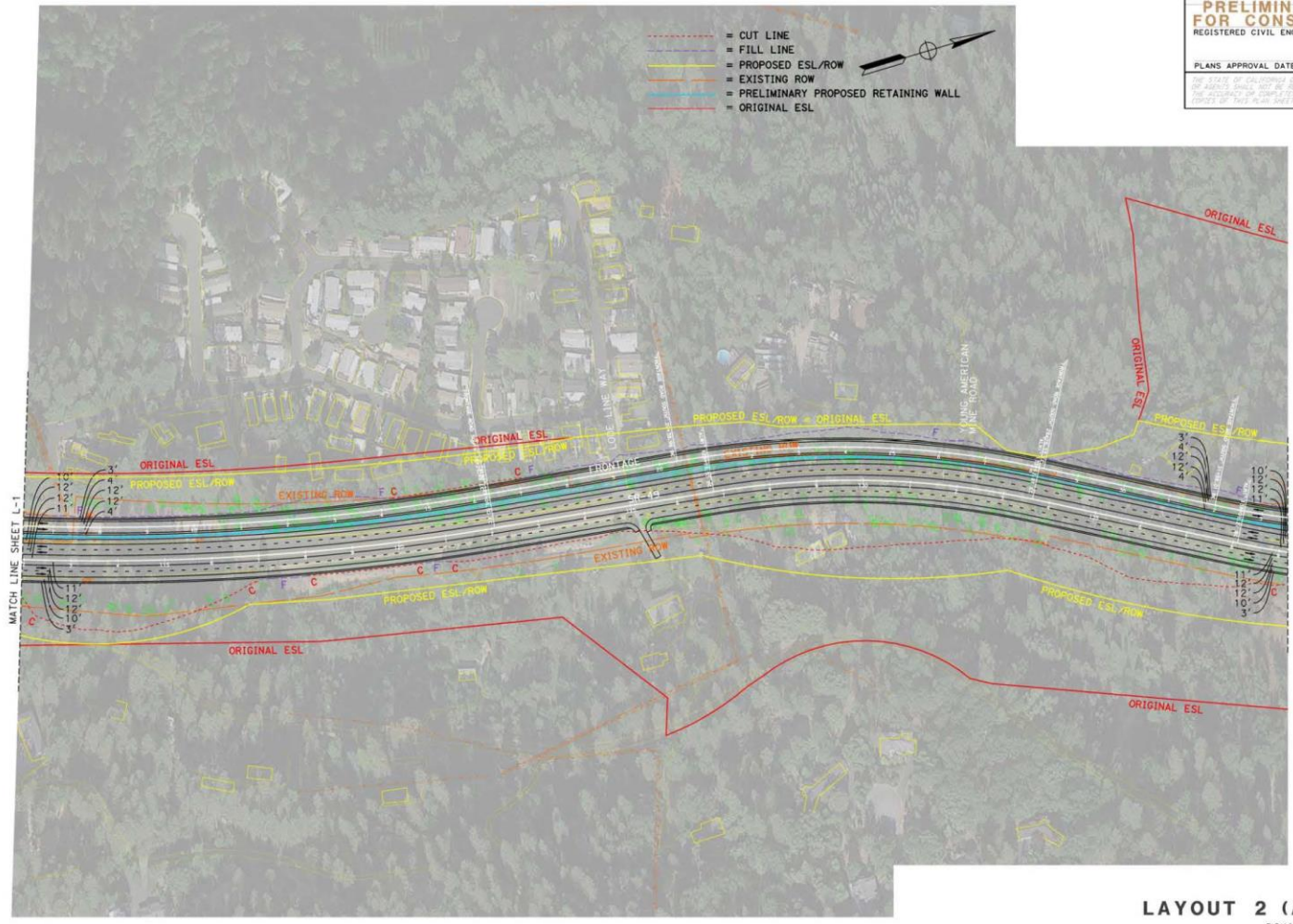
PRELIMINARY NOT FOR CONSTRUCTION
 REGISTERED CIVIL ENGINEER DATE
 ERIC SOUZA
 No. C 75706
 Exp. 06-30-22
 CIVIL

PLANS APPROVAL DATE
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LAYOUT 1 (ALT 3B)
 SCALE: 1"=100'
L-1

DATE PLOTTED: 11/15/2022
 TIME PLOTTED: 2:23:18
 00-00-00

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Eric Gibbons
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 ERIC SOUZA
 PUBLIC UTILITIES DIVISION
 CHECKED BY:
 REVISIONS BY:
 DATE REVISIONS:



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NEV	49	10.8/13.3		

PRELIMINARY NOT FOR CONSTRUCTION
 REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

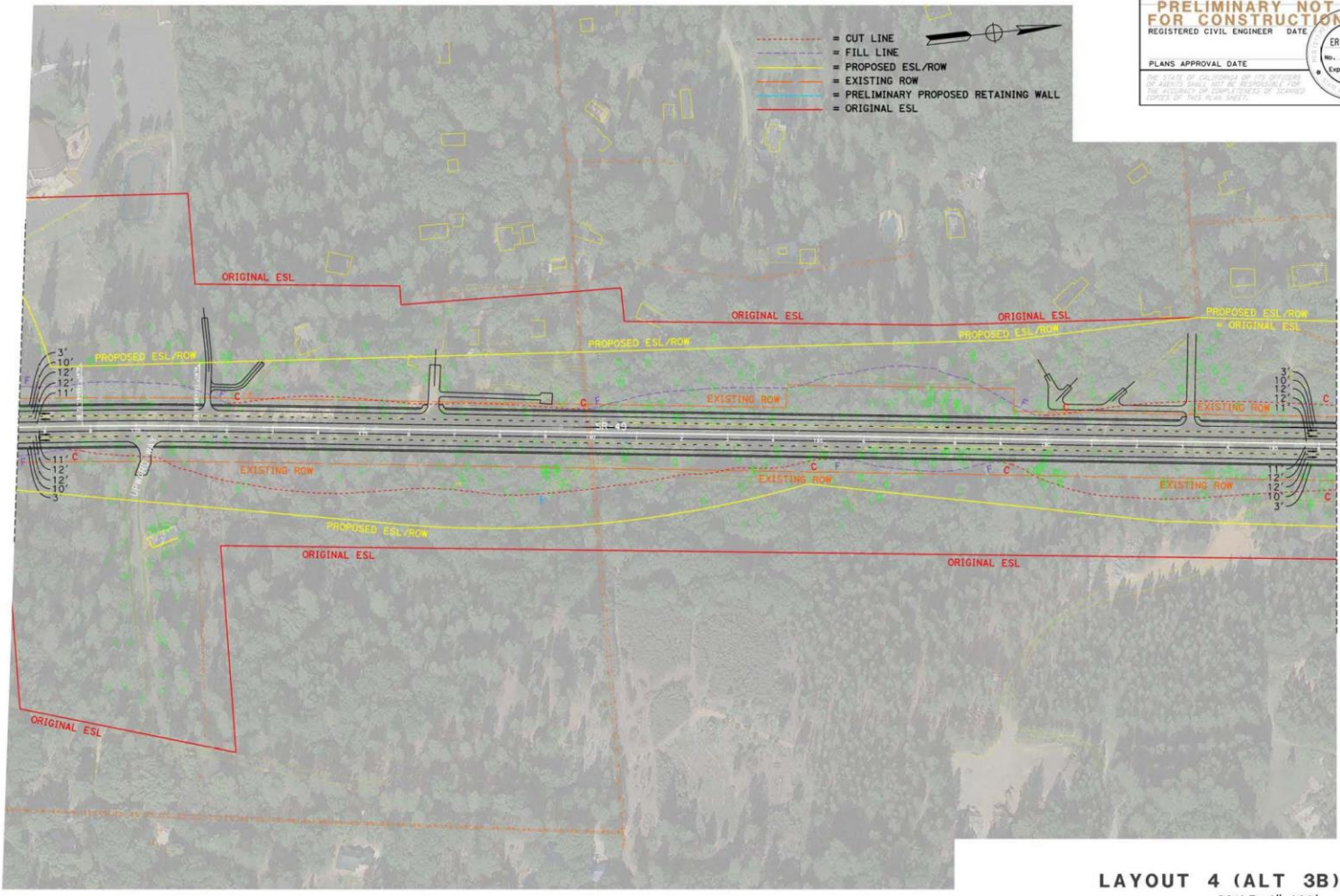
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LAYOUT 2 (ALT 3B)
 SCALE: 1"=100'
L-2

00-00-00 TIME PLOTTED 02/23/2020

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 03-DESIGN
 PUBLIC UTILITIES DIVISION
 ERIC SOUZA
 CHECKED BY:
 DESIGNED BY:
 REVISIONS:
 DATE REVISIONS BY:



DIST#	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NEV	49	10.8/13.3		

PRELIMINARY NOT FOR CONSTRUCTION
 REGISTERED CIVIL ENGINEER DATE
 ERIC SOUZA
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PLANS APPROVAL DATE
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LAYOUT 4 (ALT 3B)
 SCALE: 1"=100'
L-4

DATE PLOTTED: 06/14/2022
 TIME PLOTTED: 10:14

- - - - - = CUT LINE
- - - - - = FILL LINE
- - - - - = PROPOSED ESL/ROW
- - - - - = EXISTING ROW
- - - - - = PRELIMINARY PROPOSED RETAINING WALL
- - - - - = ORIGINAL ESL

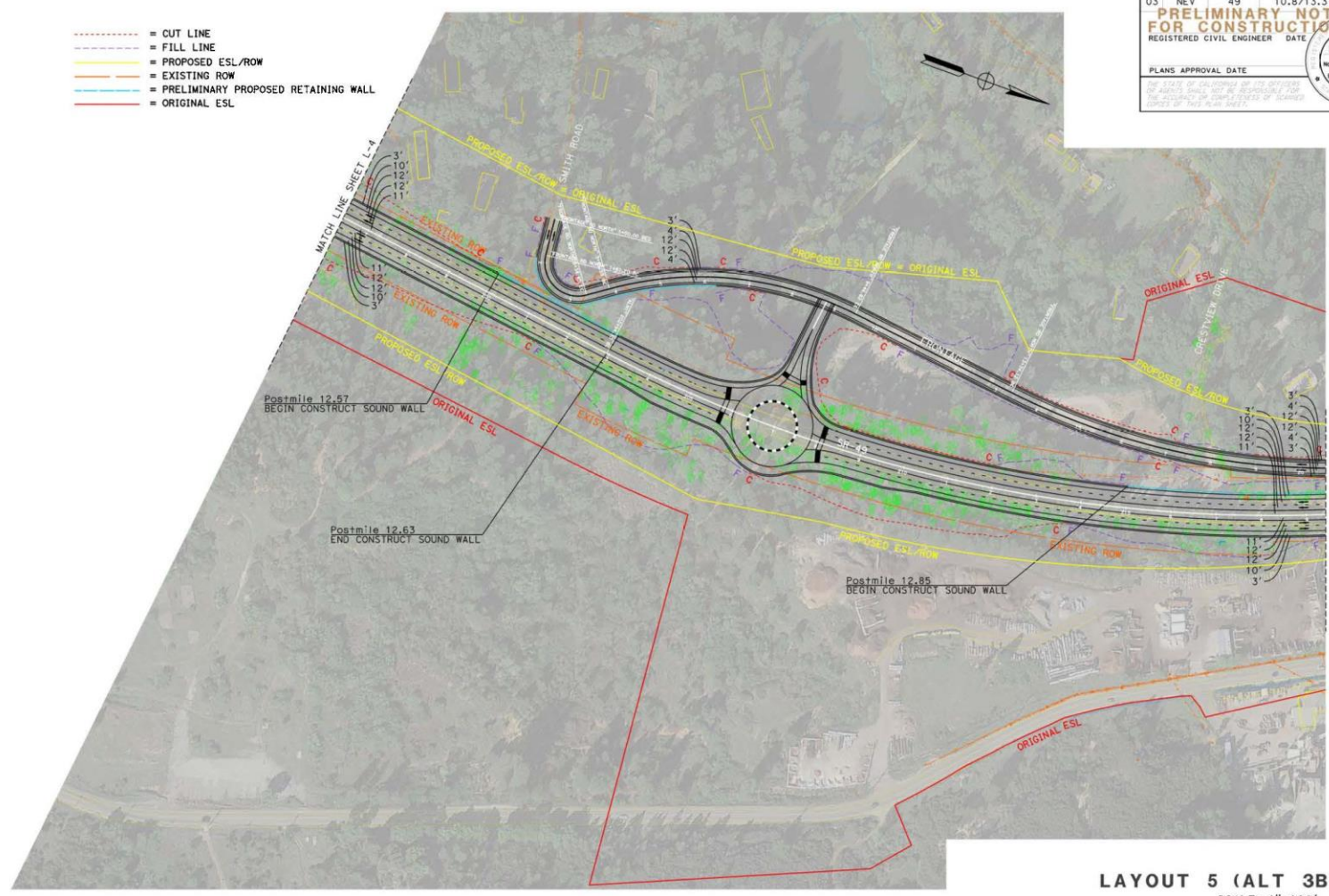
Dist#	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NEV	49	10.8/13.3		

PRELIMINARY NOT FOR CONSTRUCTION

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

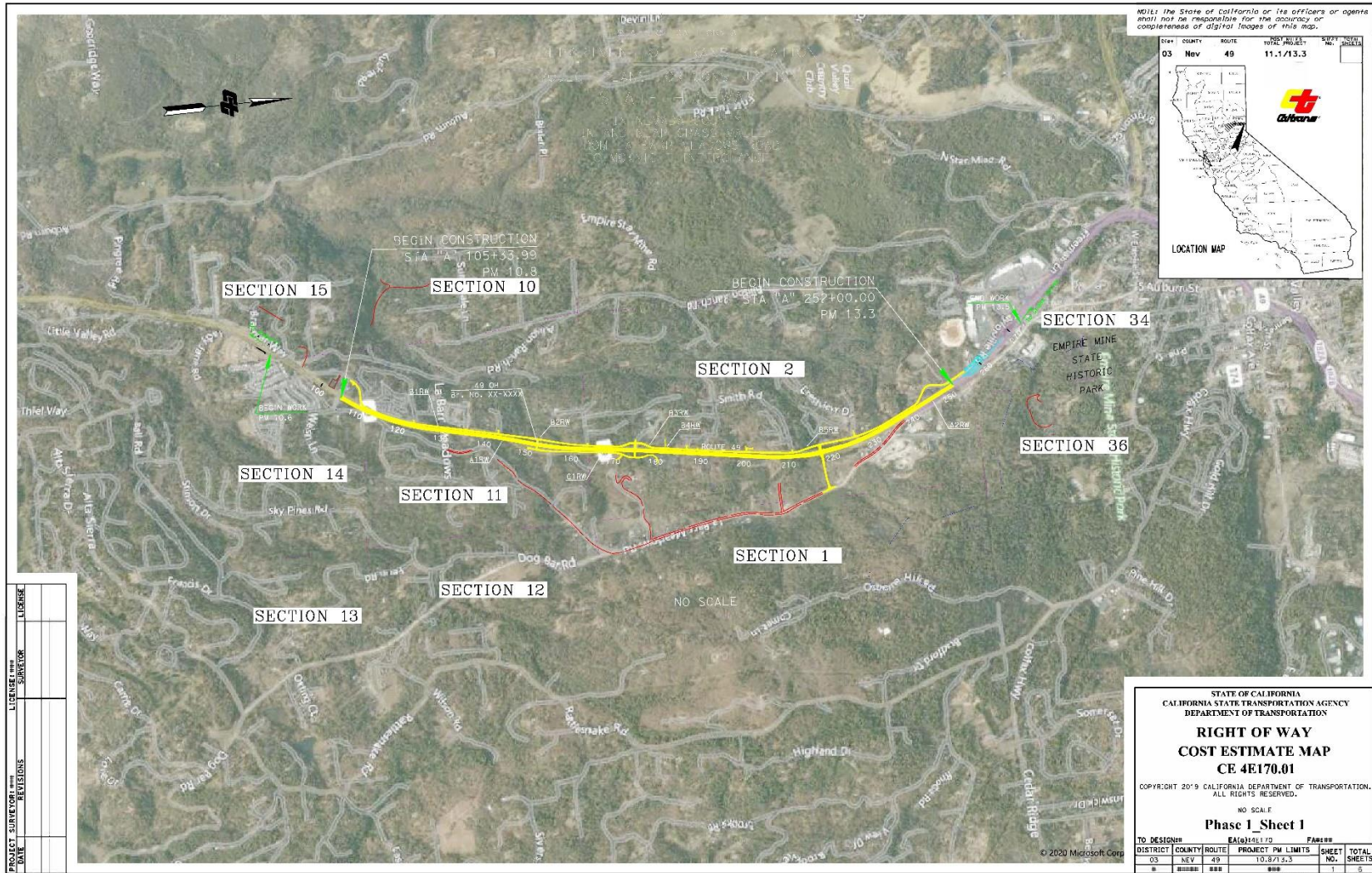
ERIC SOUZA
No. C 75706
Exp. 06-30-22
CIVIL



LAYOUT 5 (ALT 3B)
SCALE: 1"=100'
L-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Eric Souza
03-DESIGN

Appendix F. Right-of-Way Cost Estimate Maps



NOTE: The State of California or its officers or agents shall not be responsible for the accuracy or completeness of digital images of this map.

STATE OF CALIFORNIA
 COUNTY ROUTE PROJECT NO. SHEET NO.
 03 Nev 49 11.1/13.3

LOCATION MAP

PROJECT SURVEYOR	DATE
REVISIONS	
LICENSE #	SURVEYOR

STATE OF CALIFORNIA
 CALIFORNIA STATE TRANSPORTATION AGENCY
 DEPARTMENT OF TRANSPORTATION

**RIGHT OF WAY
 COST ESTIMATE MAP
 CE 4E170.01**

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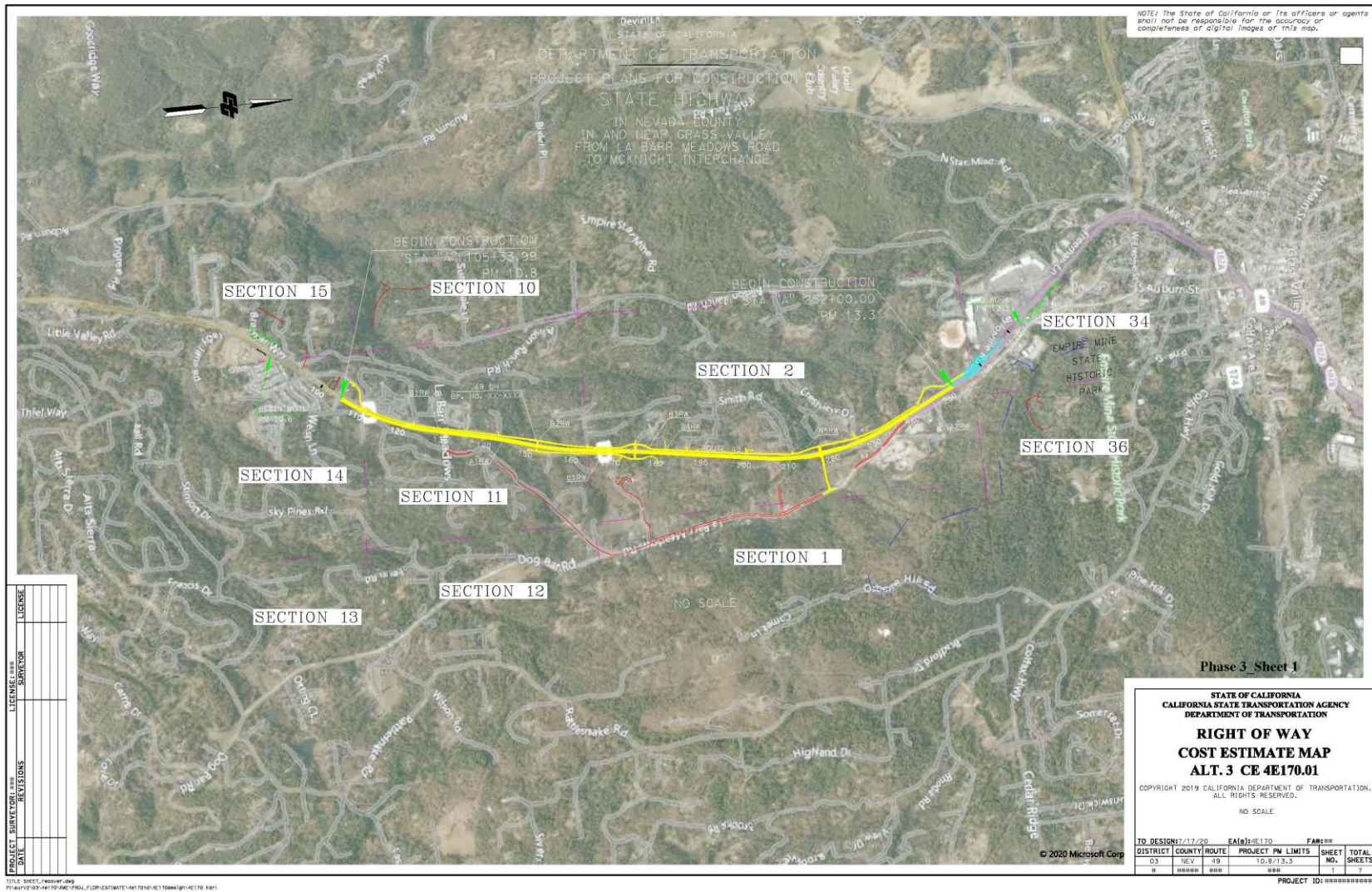
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Phase 1, Sheet 1

TO DESIGN#	EA(0)14170	PA(0)11	NO.	TOTAL
DISTRICT	COUNTY	ROUTE	PROJECT	PM LIMITS
03	NEV	49	11.1/13.3	1
1	1	1	1	1

PROJECT ID: 0000000000

TITLE: 04E170.01.dwg
 P:\2019\04\03\04E170\ESTIMATE\11.1\04E170-01-11.1-01.dwg



Appendix G. Species Lists



Selected Elements by Scientific Name
 California Department of Fish and Wildlife
 California Natural Diversity Database



Query Criteria: Quad IS (Grass Valley (3912121))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Calystegia stebbinsii</i> Stebbins' morning-glory	PDCON040H0	Endangered	Endangered	G1	S1	1B.1
<i>Carex xerophila</i> chaparral sedge	PMCYP03M60	None	None	G2	S2	1B.2
<i>Clarkia biloba ssp. brandegeeeae</i> Brandegee's clarkia	PDONA05053	None	None	G4G5T4	S4	4.2
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
<i>Fremontodendron decumbens</i> Pine Hill flannelbush	PDSTE03030	Endangered	Rare	G1	S1	1B.2
<i>Juncus digitatus</i> finger rush	PMJUN013E0	None	None	G1	S1	1B.1
<i>Laterallus jamaicensis coturniculus</i> California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
<i>Lathyrus sulphureus var. argillaceus</i> dubious pea	PDFAB25101	None	None	G5T1T2Q	S1S2	3
<i>Phrynosoma blainvillii</i> coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
<i>Rhynchospora capitellata</i> brownish beaked-rush	PMCYP0N080	None	None	G5	S1	2B.2
<i>Sidalcea stipularis</i> Scadden Flat checkerbloom	PDMAL110R0	None	Endangered	G1	S1	1B.1

Record Count: 11

Species List for NEV 49 Shoulder (03-4e170)

Label: Enforced: Inbox 120 day (4 months) Expires: Fri 2/26/2021 12:11 PM

NMFSWCRCA Specieslist - NOAA Service
Account <nmfswcrca.specieslist+canned.response@noaa.gov>
Thu 10/29/2020 1:11 PM



To: Angell, Kelli@DOT

EXTERNAL EMAIL. Links/attachments may not be safe.

Receipt of this message confirms that NMFS has received your email to nmfswcrca.specieslist@noaa.gov. If you are a federal agency (or representative) and have followed the steps outlined on the California Species List Tools web page (http://www.westcoast.fisheries.noaa.gov/maps_data/california_species_list_tools.html), you have generated an official Endangered Species Act species list.

Messages sent to this email address are not responded to directly. For project specific questions, please contact your local NMFS office.

Northern California/Klamath (Arcata) 707-822-7201

North-Central Coast (Santa Rosa) 707-387-0737

Southern California (Long Beach) 562-980-4000

California Central Valley (Sacramento) 916-930-3600

Reply
Forward

Angell, Kelli@DOT
Thu 10/29/2020 1:10 PM



To: nmfswcrca.specieslist@noaa.gov

Department of Transportation
Caltrans
703 B Street
Marysville, CA 95609
NEV 49 Shoulder (03-4e170)
Kelli Angell
Kelli_Angell@dot.ca.gov
(530) 741-4486

Quad Name **Grass Valley**

Quad Number **39121-B1**

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 -

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 -



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:

October 29, 2020

Consultation Code: 08ESMF00-2020-SLI-1554

Event Code: 08ESMF00-2021-E-00642

Project Name: State Route 49 Highway Widening Project 03-4E170

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/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-1554

Event Code: 08ESMF00-2021-E-00642

Project Name: State Route 49 Highway Widening Project 03-4E170

Project Type: TRANSPORTATION

Project Description: Highway widening project

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/39.18582375701072N121.06083900714613W>



Counties: Nevada, CA

Endangered Species Act Species

There is a total of 4 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 Fisheries¹, 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.

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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 <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Flowering Plants

NAME	STATUS
Pine Hill Flannelbush <i>Fremontodendron californicum ssp. decumbens</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4818	Endangered
Stebbins' Morning-glory <i>Calystegia stebbinsii</i> 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.

LIST OF TECHNICAL STUDIES

Draft Relocation Impact Statement – August 2020

Traffic Analysis Report – November 2019

Technical Memorandum: SR 49 Corridor VMT and GHG Estimates – March 2020

Visual Impact Assessment – March 2018 & updated August 2020

Cultural Studies:

- Historic Property Survey Report – September 2020
- Multi-Component Evaluation Report – September 2020
- Archaeological Survey Report – September 2020

Initial Site Assessment (ISA) – December 2018 & updated May 2020

Air Quality Report – July 2020

Noise Study Report – July 2020

Energy Analysis Report was completed – July 2020

Aquatic Resources Delineation – April 2019

Natural Environment Study – July 2020

Community Impact Analysis – September 2020

To obtain a copy of one or more of these technical studies/reports or the Environmental Impact Report/Environmental Assessment, please send your request to the following email address:

Nev.49@dot.ca.gov.

Please indicate the project name and project identifying code (under the project name on the cover of this document) and specify the technical report or document you would like a copy of. Provide your name and email address or U.S. postal service mailing address (street address, city, state and zip code).