

Shaver Lake Viaduct

On State Route 168 from post miles 48.9 to 49.75 in Fresno County

06-FRE-168-PM 48.9-49.75

Project ID Number 0620000065

Initial Study with Proposed Mitigated Negative Declaration

Volume 1 of 2



Prepared by the
State of California Department of Transportation

July 2022



General Information About This Document

What's in this document:

The California Department of Transportation (Caltrans) has prepared this Initial Study, which examines the potential environmental impacts of alternatives being considered for the proposed project in Fresno County in California. The document explains why the project is being proposed, the alternatives being considered for the project, the existing environment that could be affected by the project, potential impacts of each of the alternatives, and 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 office at the following locations:
 - Caltrans District 6 Office, 1352 West Olive Avenue, Fresno, California 93728, Monday through Friday, from 8:00 a.m. to 5:00 p.m.
 - Shaver Lake Branch Library, 41344 Tollhouse Road, Shaver Lake, California 93664, Wednesday through Friday, from 1:00 p.m. to 5:00 p.m., and Saturday, from 10:00 a.m. to 2:00 p.m.
 - Online at: <https://dot.ca.gov/caltrans-near-me/district-6/district-6-projects/06-1A090>.
- Attend the virtual public hearing on Wednesday, October 19, 2022.
- Tell us what you think. If you have any comments regarding the proposed project, please attend the virtual public hearing, and/or send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to: Trais Norris, District 6 Environmental Division, California Department of Transportation, 2015 East Shields Avenue, Suite 100, Fresno, California 93726. Submit comments via email to: trais.norris@dot.ca.gov.
- Submit comments by the deadline: November 3, 2022.

What happens next:

After comments are received from the public and the reviewing agencies, Caltrans 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 appropriated, Caltrans could design and construct all or part of the project.

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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 write to or call Caltrans, Attention: Trais Norris, District 6 Environmental Division, California Department of Transportation, 2015 East Shields Avenue, Suite 100, Fresno, California 93726; phone number (209) 601-3521 (Voice), or use the California Relay Service 1-800-735-2929 (Teletype to Voice), 1-800-735-2922 (Voice to Teletype), 1-800-855-3000 (Spanish Teletype to Voice and Voice to Teletype), 1-800-854-7784 (Spanish and English Speech-to-Speech), or 711.

Install a viaduct on a new alignment on State Route 168 south of
Huntington Lake Road from post miles 48.9 to 49.75 in Fresno County

INITIAL STUDY
with Proposed Mitigated Negative Declaration

Submitted Pursuant to: (State) Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation



Jennifer H. Taylor
Environmental Office Chief, District 6
California Department of Transportation
CEQA Lead Agency

08/03/2022

Date

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DRAFT

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

State Clearinghouse Number: pending

District-County-Route-Post Mile: 06-FRE-168-PM 48.9/49.75

EA/Project Number: 06-1A090/0620000065

Project Description

The California Department of Transportation (Caltrans) proposes to install a viaduct on a new alignment on State Route 168 to repair pavement settlement and prevent pavement failures due to slope subsidence along a section of gabion wall at the Shaver Lake shoreline in Fresno County, near Shaver Lake, from post miles 48.9 to 49.75.

Determination

An Initial Study has been prepared by Caltrans, District 6. On the basis of this study, it is determined that the proposed action with the incorporation of the identified mitigation measures will not have a significant effect on the environment for the following reasons:

The project would have no effect on air quality, cultural resources, energy, paleontological resources, hazards and hazardous materials, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation, tribal cultural resources, utilities and service systems, or wildfire.

The project would have less than significant effects to agriculture and forest resources, biological resources, hydrology and water quality, geology and soils, and greenhouse gases.

With the following mitigation measures incorporated, the project would have less than significant effects to aesthetics:

- Reforesting and revegetation will be done in coordination with Southern California Edison according to California Forest Practice Rules. Aesthetic treatments will be added to guardrails and viaduct. Natina coating will be applied to the proposed guardrail system to allow the structure's colors to better complement the surrounding natural environment. The existing gabion wall will be removed and replaced with rock slope protection backfilled with soil; this will create bench-like shelves that will be planted with native vegetation. The Federal Energy Regulatory Commission (FERC) guidelines will determine the erosion control plans along the Shaver Lake shoreline.

Jennifer H. Taylor
Environmental Office Chief, District 6
California Department of Transportation

Date

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) proposes to realign State Route 168 and install a 780-foot-long viaduct south of Huntington Lake Road near the Shaver Lake shoreline in Fresno County. The project stretches from post miles 48.9 to 49.75.

State Route 168 serves as a major recreational route to Shaver Lake, Huntington Lake, and other destinations in the Sierra Nevada Mountains. Within the project area, State Route 168 runs east-west through the rural Shaver Lake community. Within the limits of the project, State Route 168 is a two-lane minor arterial conventional highway with 11-foot to 12-foot lanes and 1-foot to 8-foot shoulders. The roadway is used by vehicles as well as bicycles. Much of the property surrounding State Route 168 is within the Sierra National Forest that is owned and managed by Southern California Edison.

The Shaver Lake Launch Ramp and the Sierra Marina sit at the north end of Shaver Lake in the Sierra National Forest and make up the main boat launching area for the public at Shaver Lake. There are no fees for use of ramps or parking facilities. However, the Shaver Lake Launch Ramp and the Sierra Marina are privately owned by Southern California Edison and leased to Fresno County for public use.

Within the project area are three connecting driveways and roads: an unpermitted, unpaved rural road leading to boat parking and storage, a paved driveway leading to a private marina and a Shaver Lake day use access road, and Huntington Lake Road. To the northwest is a dense stand of trees damaged by wildfire in 2020. To the southeast lies the Shaver Lake shoreline.

The project area has a long history of repeated slope and pavement failures due to saturated soils and an abundance of groundwater at the project site. Each failure was addressed with an emergency project that attempted to permanently correct the issue. These emergency projects are listed below:

- 2004—Emergency Limited Bid Force Account project performed the removal and replacement of the failed embankment, replaced the pavement, and placed rock-slope protection and willow trees on the slope.
- 2008—Emergency project repaired sections of pavement that showed subsidence, potholes, delamination, and rutting. The scope of work included asphalt concrete removal and replacement.

- 2010—Emergency Limited Bid contract performed slope excavation and gabion wall (a wall made of rectangular wire mesh filled with rock or cobble) construction as recommended by Geotechnical investigators to repair the undermined pavement and tension cracks extending into the travel lanes.
- 2010—An emergency contract performed gabion wall and trench drain construction because the area showed erosion, soil saturation, and an impacted drainage trench system.
- 2011—Emergency Force Account contract removed and replaced failed asphalt concrete due to saturated base conditions and localized pavement failures. At this time, it was noted that emergency work to stabilize the pavement and fill potholes was beyond the means of State forces.
- 2017—Emergency Force Account contract performed slope excavation and reconstruction, and soil consolidation, two courses of gabion wall reconstruction and shoulder repair due to a natural occurring drainage path located beneath the wall that eroded out embankment materials.
- 2019—Emergency contract that replaced a failed 30-inch pipe culvert section, replaced a section of the gabion wall, excavated unsuitable and saturated material, reconstructed new fill material, and placed new hot mix asphalt. The slip-out had over 12 inches of vertical subsidence at the edge of the lane line and over 4 inches of horizontal cracking patterns that extend to the centerline of the roadway. This was thought to be due to the separated section of the culvert beneath the shoulder, which opened an 11-foot-deep sinkhole where water and fill material were seen to be flowing through the separated pipe. The culvert separation also allowed for the creation of a drainage path along the backside of the large gabion wall, eroding embankment materials.
- 2020—Emergency Force Account contract rebuilt 100 linear feet of slope, and repaired the asphalt concrete dike and pavement after damage caused by an inundated drainage system.

To determine long-term solutions, Caltrans performed a subsurface investigation in July 2019. Four bore holes showed subsurface soils were composed of mostly silty sand and medium dense silty sand with traces of gravel and cobbles down to a depth of 80 feet. Spring water was seen at the highway elevation and was also continually seeping out of various locations in the existing cuts north and northeast of the area. Spring water is likely causing subsurface soils to migrate through and under the gabion wall, creating voids, settlement, and roadway tension cracks.

This project proposes a permanent solution to the repeated slope failure and subsidence due to saturated soils by stabilizing the roadway with a deep foundation that penetrates the granite below the silty sand and gravel. A build

alternative and a no-build (no-action) alternative are being considered. See Figure 1-1 for the project vicinity map and Figure 1-2 for the project location map.

The project's escalated 2024/2025 construction cost is estimated at \$30,000,000. The project is programmed in the 2024/2025 State Highway Operation and Protection Program.

Figure 1-1 Project Vicinity Map

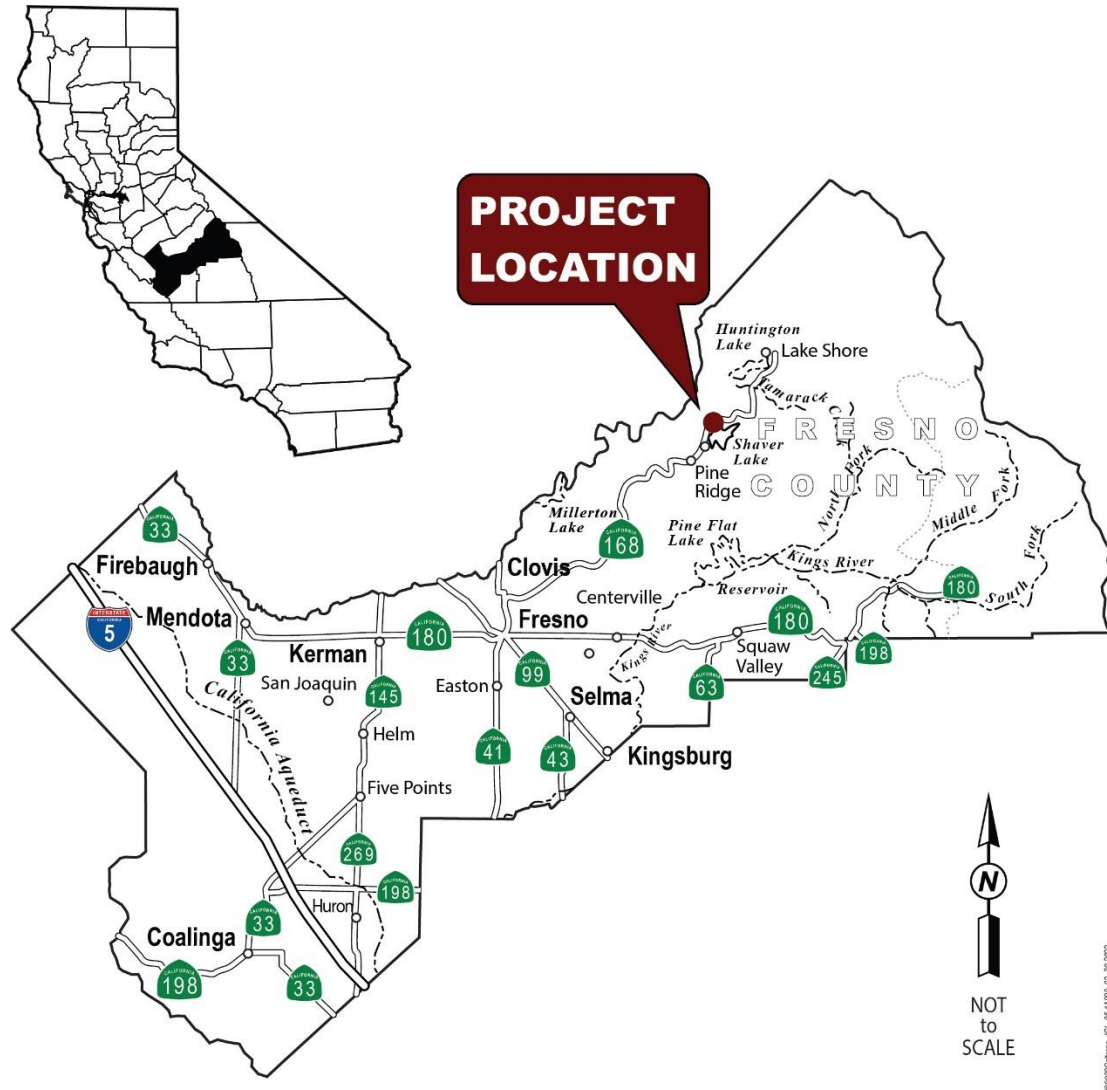
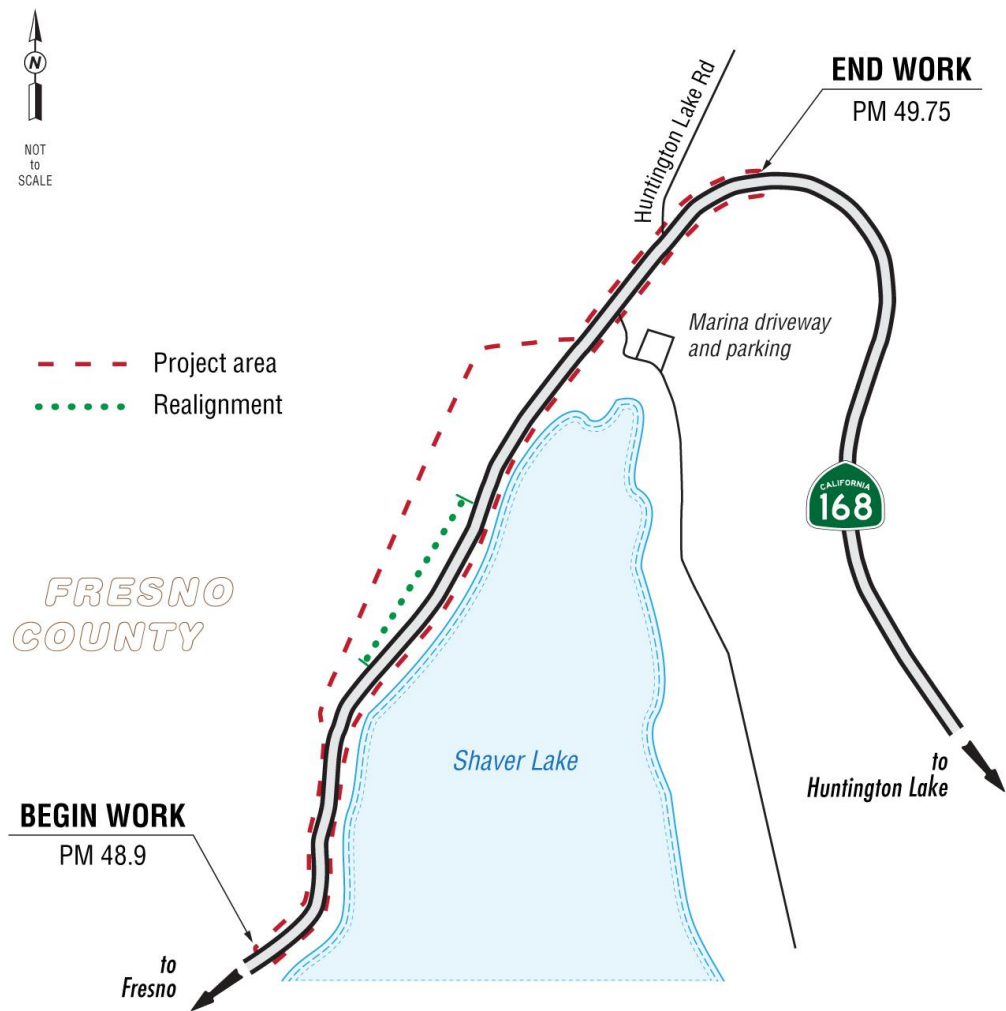


Figure 1-2 Project Location Map



1.2 Purpose and Need

1.2.1 Purpose

The purpose of the project is to alleviate repeated slope and pavement failures on State Route 168 near the Shaver Lake shoreline.

1.2.2 Need

The roadway is unstable due to the presence of an underground spring, resulting in the repeated need for repairs due to deep subsidence.

1.3 Project Description

The project proposes a permanent solution to repair pavement settlement and prevent pavement failures due to slope subsidence along a section of gabion wall at the Shaver Lake shoreline in Fresno County, near Shaver Lake, from post miles 48.9 to 49.75. Alternative 1 is the no-build alternative. Alternative 2 was eliminated from further consideration and is discussed under Section 1.5, Alternatives Considered but Eliminated from Further Discussion. Alternative 3 is the build alternative.

1.4 Project Alternatives

1.4.1 Build Alternative

Alternative 3 would construct a two-lane viaduct on a new alignment. The viaduct would be a bridge-like structure set on deep foundations spanning the area of current pavement distress. The foundations would be made of large concrete posts driven 40 to 60 feet into the ground to act as a leg or support for the viaduct. Each lane would be 12 feet wide, with 8-foot-wide shoulders. The viaduct would be 780 feet in length and would be realigned 63 feet into the existing hillside. The realigned roadway would be 1,200 feet in length and would straighten the roadway. This realignment would simplify construction staging, reduce the need for reversing traffic control, and shorten construction days.

The beginning of construction would involve cutting into the slope next to the existing roadway; this would require a single-lane closure with reversing traffic control in the remaining lane. Once enough of the slope is cut away to provide adequate movement for construction equipment, both lanes would be open to the public. Reversing traffic control would also be used when the viaduct is connected to the existing roadway. Once the viaduct is constructed, traffic would be directed onto the new alignment as the existing alignment and gabion wall are removed. State Route 168 would remain open to the public

during the entire construction period. Recreational services, including access to the marina, would be available during construction.

Southern California Edison right-of-way would be acquired for this alternative. No temporary construction easements or detours are anticipated. Construction would take about 550 days over the course of 19 months to complete.

This project contains a number of standardized project measures that are used on most, if not all, Caltrans projects and were not developed in response to any specific environmental impact resulting from the proposed project. These measures are listed later in this chapter under Section 1.6, Standard Measures and Best Management Practices Included in All Build Alternatives.

1.4.2 No-Build (No-Action) Alternative

Alternative 1 is the no-build alternative. The project would not meet the purpose and need under Alternative 1. Under Alternative 1, the pavement and slope would remain untouched and would be vulnerable to future subsidence and pavement failures. The potential pavement and slope failures could create a cost to life and property and involve additional construction.

1.5 Alternatives Considered but Eliminated from Further Discussion

Alternative 2 proposed to construct a bypass on a new alignment 200 feet above the existing State Route 168 failure area. This alternative would have realigned the highway away from the lake shore and upslope of any potential spring activity. The realignment would have disturbed up to 7.3 acres of land and required the purchase of new right-of-way. In addition, there would have been an additional 0.7 acre of Temporary Construction Easement needed to create a new access road north of the proposed right-of-way for Southern California Edison and the Sierra Marina. Approximately 60,000 cubic yards of cut and 17,000 cubic yards of fill would be needed for this alternative.

According to the Preliminary Geotechnical Design Report completed for this project in December 2021, shallow groundwater and decomposed Granodiorite were encountered at shallow depths throughout the proposed realignment. These conditions would be susceptible to the same subsidence as the current roadway, and therefore this alternative would not be a permanent solution to the repeated pavement failures. Alternative 2 would not meet the purpose and need of the project and was therefore eliminated from further discussion.

1.6 Standard Measures and Best Management Practices Included in All Build Alternatives

- Procedures pertaining to air pollution and dust control would be addressed in Caltrans Standard Specifications, Section 14-9.02—Air Pollution Control and Section 10-5—Dust Control. A Dust Control Plan approved by the San Joaquin Air Pollution Control District is needed if at least 2,500 cubic yards of material are moved in a day for at least three days of the project or 5 or more acres of land will be disturbed during construction.
- A lead compliance plan developed by a Certified Industrial Hygienist is required and would be addressed in Standard Special Provision 7-1.02K(6)(j)(iii)—Unregulated Earth Material Containing Lead in the bid package.
- If guardrails, signposts, or other sources of treated wood waste are to be removed during construction, Standard Special Provision 14-11.14—Treated Wood Waste would be included in the bid package.
- Procedures to control erosion, sedimentation, and runoff would be included in the Stormwater Pollution Prevention Plan to be prepared before the start of project construction. The contractor, as required in Caltrans Standard Specifications Section 13-1, must abide by the Stormwater Pollution Prevention Plan and address all potential water quality impacts that may occur during construction operations.
- If the project disturbs 1 acre or more of soil, a Notice of Intent is to be submitted to the appropriate Regional Water Quality Control Board at least 30 days before the start of construction, a Stormwater Pollution Prevention Plan is to be prepared and implemented during construction to the satisfaction of the resident engineer, and a Notice of Termination shall be submitted to the Regional Board upon completion of construction and site stabilization. A project would be considered complete when the criteria for final stabilization in the Construction General Permit are met.
- If less than 1 acre of soil is disturbed, a Water Pollution Control Plan would be required to be prepared by the contractor per the 2018 Caltrans Standard Specifications Section 13-1—Water Pollution.
- During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction noise is regulated by Caltrans Standard Specifications Section 14-8—Noise Control.

1.7 Discussion of the NEPA Categorical Exclusion

This document contains information regarding compliance with the California Environmental Quality Act (CEQA) and other state laws and regulations. Separate environmental documentation, supporting a Categorical Exclusion determination, has been prepared in accordance with the National Environmental Policy Act. When needed for clarity, or as required by CEQA, this document may contain references to federal laws and/or regulations (CEQA, for example, requires consideration of adverse effects on species identified as a candidate, sensitive, or special-status species by the U.S. National Marine Fisheries Service and the U.S. Fish and Wildlife Service—that is, species protected by the Federal Endangered Species Act).

1.8 Permits and Approvals Needed

The following permits, licenses, agreements, and certifications are required for project construction:

Agency	Permit/Approval	Status
U.S. Army Corps of Engineers	Clean Water Act Section 404 Nationwide Permit	The 404 permit would be obtained before the start of construction.
Regional Water Quality Control Board	Clean Water Act Section 401 Water Quality Certification	The 401 certification (permit) would be obtained before the start of construction.
California Department of Fish and Wildlife	1600 Lake and Streambed Alteration Agreement	The 1600 permit would be obtained before the start of construction.

Chapter 2 CEQA Evaluation

2.1 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. Potential impact determinations include Significant and Unavoidable Impact, Less Than Significant Impact With Mitigation Incorporated, Less Than Significant Impact, and No Impact. In many cases, background studies performed in connection with a project will indicate that there are no impacts to a particular resource. A “No Impact” answer reflects this determination. The questions in this checklist 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 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.

“No Impact” determinations in each section are based on the scope, description, and location of the proposed project as well as the appropriate technical report (bound separately in Volume 2), and no further discussion is included in this document.

2.1.1 Aesthetics

Considering the information in the Visual Impact Assessment dated April 2022, the following significance determinations have been made:

Except as provided in Public Resources Code Section 21099:

Question—Would the project:	CEQA Significance Determinations for Aesthetics
a) Have a substantial adverse effect on a scenic vista?	No Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	Less Than Significant Impact

Question—Would the project:	CEQA Significance Determinations for Aesthetics
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	Less Than Significant Impact With Mitigation Incorporated
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	No Impact

Affected Environment

State Route 168 serves as a major recreational route to Shaver Lake, Huntington Lake, and other destinations in the Sierra Nevada Mountains. Within the limits of the project, State Route 168 is a rural two-lane minor arterial conventional highway. The roadway is used by vehicles as well as bicycles. Much of the property surrounding State Route 168 is within the Sierra National Forest that is owned and managed by Southern California Edison.

The project is in the Sierra National Forest in the Sierra Nevada Mountains. The terrain is mountainous with dense pine wooded forest. Some of the project area suffered fire damage related to the Creek Fire in 2020 that burned a total of 379,895 acres and destroyed 853 structures and damaged 64 more. The project area contains expansive areas of burned trees. State Route 168 is aligned directly adjacent to Shaver Lake. The lake provides for an abundant array of recreational activities, including boating, fishing, swimming, kayaking, and camping. It is a popular destination all four seasons of the year because of its proximity to the Fresno/Clovis metropolitan area and surrounding communities.

The highway is built on grade supported on the lake side of the highway by a gabion wall approximately 40 feet tall. The Sierra Marina is a large boat launching facility at the base of the gabion wall. The facility has a boat dock with the capacity to store about 500 boats. There is also a parking lot for vehicles next to the boat launching area with the capacity to park about 300 vehicles.

The proximity of the lake and the elevated alignment of the highway combine to offer distant views across the lake to the east of scenic mountains, rock outcroppings, and pine trees. The mountainous landform plays a role in concealing and revealing views of the surrounding landscape. The landcover

also helps define the visual setting and the views within the project corridor. The landcover is defined as those physical objects on the land. The landcover in the project corridor includes the trees and other vegetation, the lake, a dam, large boulders, the highway, a boat dock with boats, a parking lot, a boat storage building, a gabion retaining wall, rock outcroppings, and other small buildings at the boat dock facility. These elements all contribute to the natural and scenic setting of the project corridor.

Visual Resources

Visual resources of the project setting are defined and identified below by assessing visual character and visual quality in the project corridor.

Visual Character

Visual character includes attributes such as form, line, color, and texture and is not considered good or bad.

The existing visual character of the project corridor is defined by the surrounding Sierra National Forest mountainside and Shaver Lake. The 2020 Creek Fire burned much of the trees on the upper portion of the mountainside that lies adjacent to the State Route 168 roadway. The fire opened views of the brown and grey granite rock outcroppings on the mountain. The most dominant feature of the area is the lake itself, visually framed by the pine trees. Varying patterns, density, and height of the trees on the mountainside highlight the diversity of views. The colors of the project area can be defined by the dark forest green of the adjacent pines, blues of the lake, greys from the roadway, gabion wall, and granite rock outcroppings, and browns from the fallen pine leaves on the forest floor. In winter, snow will sometimes cover the trees and the mountainside.

The visual character of the project would be somewhat compatible with the existing visual character of the corridor. The project would remove some vegetation, including mature pine trees and shrubs because the viaduct's proposed alignment would expand slightly into the adjacent hillside. The gabion wall will be removed. The proposed viaduct would feature a CA ST-75 bridge rail that would be stained with a Natina coating. A Natina coating is a long-lasting color treatment that reacts to the minerals in rock, concrete, and galvanized steel. The Natina coating's brown color would allow the bridge railing to complement the colors of the adjacent mountainside. The new alignment and bridge railing are expected to minimally impede views of the lake or the eastern views of the forest mountainside from the roadway.

Visual Quality

Visual quality is evaluated by identifying the vividness, intactness, and unity present in the project corridor. The visual quality of the existing corridor would be altered by the proposed project. The proposed viaduct is expected to install a CA ST-75 bridge railing that, although Natina coated, would still be

expected to impact the intactness of the site because views of the lake and pine forest would be minimally impeded by the new structure. Eastern views of the lake and mountainside would still be visible for travelers, but installation of the proposed railing would act as a slight visual impediment to a previously clear view.

Along with intactness, the quality of unity would be impacted by the proposed viaduct as well. The proposed alignment would expand slightly into the adjacent hillside, causing the removal of some pine trees and shrubs. Subsequently, the previously uniform dense pine tree edge would be impacted. If the affected trees are tall enough, their removal may open previously unseen views of the top of the mountainside that was impacted by the Creek Fire, resulting in a less dense and uniform view of the adjacent forest.

Viewers

The population affected by the project is composed of viewers. Viewers are people whose views of the landscape may be altered by the proposed project—either because the landscape itself has changed or their perception of the landscape has changed.

Viewer Exposure

Viewer exposure is a measure of the viewer's ability to see a particular object. Viewer exposure has three attributes: location, quantity, and duration.

Highway neighbors with views to the road include residents, commercial properties, institutional properties, tourists, and recreationists. These neighbors have a close view of the roadway, lake, and surrounding mountain landscape. The density of the neighbors along the route is low because the area population is less than 500 people. Therefore, the quantity of neighbors viewing the roadway is low. Neighbor viewers to the route would have a long exposure to the views and many opportunities to see the views. Their view of the roadway is considered a distant view.

Viewer Sensitivity

Viewer sensitivity is a measure of the viewer's recognition of a particular object. It has three attributes: activity, awareness, and local values.

Because State Route 168 is a Fresno County Designated Scenic Highway, overall viewer awareness and local values are high for State Route 168 and the surrounding landscape. Fresno County places heavy emphasis on preserving the existing landscape surrounding the Shaver Lake area. The Fresno County General Plan emphasizes preserving natural vegetation and terrain in visually sensitive areas along the roadways such as the dense pine forest and mountainsides. Maintaining scenic beauty while providing public access to these scenic vistas is also a priority for Fresno County.

At a state level, State Route 168 is listed as a State Scenic Highway, meaning it is important to follow the California Streets and Highway Code to preserve scenic conservation resources in this area as much as possible. At a national level, the National Scenic Byway System highlights the importance of the Sierra National Forest and preserving the National Forest scenery.

Due to the roadway's Scenic Highway status at a county and state level, viewers would have a high sensitivity and concern for any visual changes within the project area to the scenic resources surrounding State Route 168.

Roadway users have a close view of the roadway features with views of the Sierra Nevada Mountains and Sierra National Forest. For the location attribute of viewer exposure, most viewers would fall into the moderate to high exposure category. The views are equally divided between the immediate edges of the roadway and views in the distance. The route, being the main road to Shaver Lake, is lightly to moderately traveled. Overall, the quantity of viewer exposure would be moderate.

The overall exposure for viewers *from* the highway is moderate. The overall exposure for viewers *to* the highway is moderate.

Key Views

Because it is not feasible to analyze all the views in which the proposed project would be seen, it is necessary to select a number of key views that would most clearly demonstrate the change in the project's visual resources. Key views at three locations are described below.

Figure 2-1 Key View 1



Key View 1—At the east side of Shaver Lake in the vehicle parking area of the marina looking west.

Figure 2-2 Key View 2



Key View 2—At the east side of Shaver Lake at the boat dock parking lot of the marina looking west.

Figure 2-3 Key View 3



Key View 3—At the west side of Shaver Lake at post mile 49.1 of State Route 168 looking northeast.

Environmental Consequences

The levels of visual impacts are determined by combining resource change and viewer response in an impact rating scale format. The impacting rating scale includes low, moderate-low, moderate, moderate-high, and high.

Resource Change

The change in color, texture, and diversity caused by the removal of mature vegetation and the installation of CA ST-75 bridge railing would cause a low change to the visual character within the project corridor. The change to the visual quality caused by the removal of vegetation from the new alignment and installation of the bridge railing on the proposed viaduct would result in a moderate-low change. The combined effects would result in an overall resource change of a moderate-low level.

Visual Impact

Visual impacts are determined by assessing changes to the visual resources and predicting viewer response to those changes. These impacts can be beneficial or detrimental. Cumulative impacts and temporary impacts due to the contractor's operations are also considered.

Visual impacts to the three chosen key views are described below, noting the visual changes and viewer sensitivity and exposure.

Figure 2-4 Key View 1



Key View 1—At the east side of Shaver Lake in the vehicle parking area of the marina looking west. The build alternative would remove some of the visible trees and vegetation from the bottom of the mountainside's edge because the new alignment would shift into the hillside. The project would also install a CA ST-75 Natina-coated guardrail.

Viewer exposure for this key view would be rated as moderate. Viewer sensitivity in this area would be considered moderately high. Visual changes would result in a moderate resource change. The viewer response is expected to be moderate-high. The visual impact would be moderate.

Figure 2-5 Key View 2



Key View 2—At the east side of Shaver Lake at the boat dock parking lot of the marina looking west. The build alternative would remove some of the visible trees and vegetation from the bottom of the mountainside's edge because the new alignment would shift into the adjacent hillside. The project would also install a CA ST-75 Natina-coated guardrail.

Viewer exposure for this key view would be rated as moderate. Viewer sensitivity in this area would be considered moderately high. Visual changes would result in a moderate resource change. The viewer response is expected to be moderate-high. The visual impact would be moderate.

Figure 2-6 Key View 3



Key View 3—At the west side of Shaver Lake at post mile 49.1 of State Route 168 looking northeast. The project would realign the roadway into the adjacent hillside causing the removal of some of the mature pine trees and vegetation. Also, the project would install a CA ST-75 bridge railing on the edge of the roadway closest to the lake. The bridge railing would be Natina coated to better complement the surrounding browns and greens of the environment.

Viewer exposure for this key view would be rated as moderate. Viewer sensitivity in this area would be considered moderate-high due to the local policy in place that ensures the preservation of scenic resources. The project would result in a moderate-low resource change. The viewer response is expected to be moderate-high. The visual impact would be moderate.

Project Visual Impact Summary

The resource change for this project would be moderate. The County places heavy emphasis on preserving the existing landscape surrounding the Shaver Lake area. The Fresno County General Plan emphasizes preserving natural vegetation and terrain in visually sensitive areas along the roadways such as the dense pine forest and mountainsides. Preserving scenic beauty while providing public access to these scenic vistas is also a priority for Fresno County. The project improvements appear to be within local aesthetic values and goals. The overall viewer response of neighbors and users is expected to be moderate-high. The visual impacts expected because of the project are expected to be moderate. The project would have no impact on scenic resources within a State Scenic Highway.

Temporary Construction-Related Impacts

Temporary visual impacts may occur during the construction of the project. Equipment and materials would need to be stored during construction. There

may be a temporary increase in light and glare if night work is required. These visual impacts are expected to be temporary only and have less than substantial impacts.

Avoidance, Minimization, and/or Mitigation Measures

The following measure to avoid or minimize visual impacts would be incorporated into the project:

- Minimize tree removal. Remove only those trees and shrubs required for the construction of the new roadway facilities. Avoid removing trees and shrubs for temporary uses such as construction staging areas or temporary stormwater conveyance systems.

The following mitigation measure to offset visual impacts would be incorporated into the project:

- Replacement planting for vegetation removed or damaged. Reforesting and revegetation would be done in coordination with Southern California Edison according to California Forest Practice Rules.
- Aesthetic treatments to guardrails and viaduct. Natina coating should be applied to the proposed guardrail system to allow the structure's colors to better complement the surrounding natural environment. The existing gabion wall will be removed and replaced with rock slope protection backfilled with soil. This will create bench-like shelves that will be planted with native vegetation. The Federal Energy Regulatory Commission (FERC) guidelines will determine the erosion control plans along the Shaver Lake shoreline.

2.1.2 Agriculture and Forest Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department 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.

The project would not convert prime farmland, unique farmland, or farmland of statewide importance to nonagricultural use or conflict with existing zoning for agricultural use or a Williamson Act contract. The project is not in a

location zoned for timberland production. Considering the information available on the Fresno County Geographic Information System webpage accessed February 16, 2022, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for 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?	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	No Impact
c) Conflict with existing zoning, 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))?	Less Than Significant Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	Less Than Significant Impact
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use?	No Impact

Affected Environment

The property surrounding State Route 168 is within the Sierra National Forest, which is owned and managed by Southern California Edison. The project location is dominated by conifer forest vegetation typical of the central Sierra Nevada mountain range. The project is bordered to the south by the Shaver Lake shoreline and is bordered to the north by mostly incense cedar and lodgepole pine.

The project is also in a location vulnerable to wildfire. According to CalFire's Fire Hazard Severity Zone mapping tool, the project area is within a Moderate to Very High Fire Hazard Severity Zone. This area suffered burn damage

from the 2020 Creek Fire. According to the Fresno County Zoning ArcGIS Portal accessed in April 2022, the land north of the project is zoned as CR40—Conservation Resource and is considered both forest land as defined in Public Resources Code Section 12220(g) and timberland as defined by Public Resources Code Section 4526. Though the land is capable of growing commercial species used to produce lumber and forest products, the land is not being used for timber production. The project area does not contain timberland zoned for Timberland Production as defined by Government Code Section 51104(g).

Environmental Consequences

The project would disturb about 3.5 acres of forest land and convert 1.62 acres of forest land as a conservation resource to a transportation facility. Trees and vegetation removed because of the project would be replaced. Because of the fire damage the area sustained from the 2020 Creek Fire and because the land is not currently being used for timberland production, the project impacts to forest land and timberland are considered less than significant.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance, minimization and mitigation measures listed under Section 2.1.1, Aesthetics will also apply to minimizing impacts to forest resources.

2.1.3 Air Quality

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

Considering the information in the Air Quality Memorandum dated March 2022, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Air Quality
a) Conflict with or obstruct implementation of the applicable air quality plan?	No Impact
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?	No Impact
c) Expose sensitive receptors to substantial pollutant concentrations?	No Impact

Question—Would the project:	CEQA Significance Determinations for Air Quality
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	No Impact

2.1.4 Biological Resources

Considering the information in the Natural Environment Study (Minimal Impacts) dated March 2022, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for 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 Wildlife, U.S. Fish and Wildlife Service, or National Oceanic and Atmospheric Administration Fisheries?	Less Than Significant Impact
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	No Impact
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	Less Than Significant Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No Impact

Question—Would the project:	CEQA Significance Determinations for Biological Resources
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No Impact

Affected Environment

The Biological Study Area is defined as the action area. The action area encompasses all areas that could be directly or indirectly affected by the project. This includes the project footprint, adjacent areas subject to indirect effects, and any additional staging areas not included in the project footprint.

A list of federally endangered species and critical habitats that may be affected by the project was obtained from the U.S. Fish and Wildlife Service on November 23, 2021. In-office research (California Native Plant Society, California Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service) and field surveys were conducted by Caltrans biologists for the project.

General wildlife surveys were performed during three site visits on July 23, 2021, September 22, 2021, and November 16, 2021. Protocol-level botanical surveys were attempted by Caltrans biologists on July 12, 2021. These surveys could not be conducted to protocol because the action area was significantly damaged by the 2020 Creek Fire. The action area was surveyed where possible, and all observable plant species were identified. A wetland delineation was conducted on August 24, 2021. No listed species were seen during the surveys.

Wetlands and Other Waters

Wetland delineation surveys were conducted on August 24, 2021 by aquatic resource biologists. Seven boring sites proposed for geotechnical drilling were surveyed, and all wetlands present within the action area were delineated and mapped.

Plant Species

One plant species of special concern—Abrams’ onion—identified in the species queries was found to have historic records of occurrence or potentially suitable habitat within the action area. No habitat for any potential special-status plant species was identified in the action area during surveys.

Abrams’ Onion

Abrams’ onion (*Allium abramsii*) is found in Fresno, Madera, and Tulare counties in the understory of coniferous forests with granitic sand soils. It is a California Native Plant Society 1B.2 plant, which means it is fairly rare, threatened, or endangered throughout its range. According to the California

Native Plant Society and the California Natural Diversity Database, there are records of Abrams' onion occurring next to the action area in the vicinity of Shaver Lake. The most recent sighting occurred 0.3 mile from the action area in 2009. The action area was surveyed during the active bloom period for Abrams' onion, and no observations were made. The potential for the species to occur in the area is low.

Animal Species

Twelve species of special concern identified in species queries were found to have historic records of occurrence or potentially suitable habitat within the action area. No special-status species were seen within the action area during surveys. Given the age and distance of historic observations, as well as limited suitable habitat in the project vicinity, three of these species—northern goshawk, Sierra marten, and fisher (Southern Sierra Nevada Evolutionarily Significant Unit)—are not expected to occur within the action area. Five species—western mastiff bat, long-eared myotis, fringed myotis, long-legged myotis, and Yuma myotis—came up in species queries but are not listed as species of special concern. The remaining species—pallid bat, Townsend's big-eared bat, spotted bat, and osprey—are discussed below.

Pallid Bat

The pallid bat (*Antrozous pallidus*) is a large bat species ranging from Mexico and the southwestern United States to Oregon and Washington. The pallid bat is a California Species of Special Concern. There are two records for this species adjacent to the action area, east of Shaver Lake.

Townsend's Big-Eared Bat

Townsend's big-eared bat (*Corynorhinus townsendii*) is a medium-sized bat ranging from western North America to Virginia. Townsend's big-eared bat is a California Species of Special Concern. Within the last 20 years, there were occurrences of Townsend's big-eared bat within 2 miles of the action area.

Spotted Bat

The spotted bat (*Euderma maculatum*) is a medium-sized bat ranging from western North America and southern British Columbia to southern Mexico. The spotted bat is a California Species of Special Concern. Within the last 20 years, there were two records of this species adjacent to the action area near Shaver Lake.

Osprey

The osprey (*Pandion haliaetus*) is the only raptor in North America adapted to eating a diet almost exclusively of fish. Ospreys are found in the vicinity of permanent water bodies that support fish, including lakes, bays, reservoirs, coasts, and large rivers. Ospreys are a world-wide species, occurring throughout North America and across large areas of South America, Africa, Northern Europe, Central and Southern Asia, and coastal Australia. In

California, they currently are protected as a raptor under the Migratory Bird Treaty Act. There is one recorded occurrence of the osprey (dated 2002) at Shaver Lake within 2 miles of the action area. Suitable nesting and foraging habitats exist in the region around Shaver Lake. Although no species-specific surveys have been performed, an osprey was seen soaring overhead during wetland delineation surveys.

Threatened and Endangered Species

Seven species identified in U.S. Fish and Wildlife Service special-status species queries were found to have historic records of occurrence or potentially suitable habitat within the action area: Yosemite toad, monarch butterfly, delta smelt, fisher (Southern Sierra Nevada Evolutionarily Significant Unit), California red-legged frog, Sierra Nevada yellow-legged frog, and Sierra Nevada red fox. Of these, none were found to have a high potential to occur onsite or be impacted by the project.

Environmental Consequences

Wetlands and Other Waters

There are 0.45 acre of wetlands in the project area, but only about 0.08 acre will be impacted by the project. Due to anticipated impacts to at least one wetland adjacent to State Route 168 within the project footprint, an Aquatic Resource Delineation Report will be prepared for this project and submitted to the Sacramento District Office of the U.S. Army Corps of Engineers during the project design phase once the project design and anticipated impacts are refined. Permit applications for the 401 and 404 nationwide permits under the Clean Water Act will also be prepared for the U.S. Army Corps of Engineers and Central Valley Regional Water Quality Control Board. The purchase of in-lieu fee credits will likely be a requirement of the 404 nationwide permit as a result of impacts to wetlands. In addition to the 401 and 404 nationwide permits under the Clean Water Act, a 1602 Lake and Streambed Alteration Agreement will be prepared by the Central Region of the California Department of Fish and Wildlife to permit work on the top bank of Shaver Lake.

Plant Species

Abrams' Onion

While the action area does have marginal habitat for the Abrams' onion, the project footprint lacks the necessary groundcover, soil type, and overall habitat to support the species. Surveys did not yield any observations of Abrams' onion, so the likelihood of its presence within the project area at the time of construction is low. Because of this, construction impacts to Abrams' onion are anticipated to be unlikely.

Animal Species

Pallid Bat, Townsend's Long-Eared Bat, and Spotted Bat

There are no mines or caves within or adjacent to the action area, and there would be no work in proximity to cliffs, rock outcrops, or buildings that may provide suitable roosting habitat for the bat species. There are no large trees with loose bark or cavities suitable for roosting that would be impacted by project activities. Due to the disturbed nature of the action area, impacts associated with construction of the project are minimal. Project impacts to bats are unlikely.

Osprey

Tree removal is expected during construction. At the time of biological surveys, no nest structures were found in the action area. The project would not remove any tree of sufficient size to provide osprey roosting or nesting habitat, nor cause any measurable impacts to the habitat of prey species; no habitat impacts are expected. Noise and activity resulting from construction in proximity to suitable osprey habitat may result in the disturbance of any osprey that may be present nearby. Due to the already disturbed nature of the right-of-way, impacts associated with construction of the project are unlikely.

Threatened and Endangered Species

The project would have no effect on species identified in U.S. Fish and Wildlife Service special-status species queries. There has been no consultation with the California Department of Fish and Wildlife regarding California special-status species in the project area. Potential impacts to California special-status species are anticipated to be minimal, temporary, and discountable, with no loss of habitat. Proposed avoidance and minimization efforts would prevent take and minimize disturbance to any individuals in proximity to work activities.

Avoidance, Minimization, and/or Mitigation Measures

With implementation of the following avoidance and minimization measures, no habitat impacts are expected, and compensatory mitigation is not proposed.

Wetlands and Other Waters

In-lieu credit fees will likely be a requirement of the 404 nationwide permit under the Clean Water Act as a result of impacts to wetlands.

Plant Species

With implementation of the following avoidance and minimization measures, no habitat impacts are expected, and compensatory mitigation is not proposed.

- Worker Environmental Awareness Training will be performed by a qualified biologist for all work personnel to inform them of the special-status species potentially within the work area, protective measures,

reporting procedures, and consequences of violating environmental laws and permit requirements.

- Focused botanical pre-construction surveys will be performed during the flowering season at all work sites where ground-disturbance is anticipated, and with suitable habitat within or near California Native Plant Society and California Natural Diversity Database occurrence records.
- Populations found in proximity to work sites will be protected by an environmentally sensitive area buffer, clearly designated by high-visibility fencing.

Animal Species

- Worker Environmental Awareness Training will be performed by a qualified biologist for all work personnel to inform them of the special-status species potentially within the work area, protective measures, reporting procedures, and consequences of violating environmental laws and permit requirements.
- Tree removal will be restricted to the non-nesting season (October 1 to January 31) or until a Caltrans biologist has verified that no nesting is occurring, and the tree is cleared for removal.
- Pre-construction surveys will be performed within 500 feet of the action area to determine if any goshawks or osprey are nesting in proximity to the action area. Active nests would be protected by a 500-foot buffer from February 1 to September 30, or until any young have fledged and left the nest. Should goshawks or osprey nest in proximity to the work zone, a biological monitor would be present to ensure noise and activity do not disrupt nest-related activities including feeding, nest defense, and care of young.
- The action area will be surveyed prior to construction for the presence of roosting bats. If bats are determined to be present in the action area, a qualified biologist will monitor construction activities to determine if bats are being disturbed. If bats are disturbed, work will be suspended, and the situation will be evaluated to determine if an alternate work schedule can be developed in order to construct the project while bats are not roosting.
- Pre-construction surveys would be performed within the action area to determine if any Sierra marten or fisher denning is occurring. Active natal dens would be protected by a 500-foot buffer during the U.S. Forest Service Limited Operating Period (LOP). For Sierra marten, this would be from May 1 to June 30 or until any young have left the den. For the fisher, this would be from March 1 to June 30 or until any young have left the den.
- Construction vehicles would be limited to a 20-mile-per-hour speed limit within work zones.

- All food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in closed containers and removed daily from the entire project site to reduce the potential for attracting predator species.

2.1.5 Cultural Resources

Considering the information in the Historic Property Survey Report dated October 2021, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Cultural Resources
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	No Impact
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	No Impact

2.1.6 Energy

Considering the information in the Energy Memorandum dated April 2022, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Energy
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	No Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	No Impact

2.1.7 Geology and Soils

A Preliminary Geotechnical Design Report dated December 2021 and a Paleontological Identification Report dated February 2022 were completed for this project. The Preliminary Geotechnical Design Report noted the project site may be considered susceptible to liquefaction since saturated loose granular soils are present at this site. This could occur during a seismic event and would not be a result of the project or project construction. To ensure the

project can withstand a potential liquefaction-inducing event, a liquefaction analyses will be performed during the design stage. Considering this information, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Geology and Soils
<p>a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:</p> <p>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.</p>	No Impact
<p>ii) Strong seismic ground shaking?</p>	No Impact
<p>iii) Seismic-related ground failure, including liquefaction?</p>	No Impact
<p>iv) Landslides?</p>	No Impact
<p>b) Result in substantial soil erosion or the loss of topsoil?</p>	No Impact
<p>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 onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?</p>	No Impact
<p>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?</p>	No Impact
<p>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?</p>	No Impact
<p>f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?</p>	No Impact

2.1.8 Greenhouse Gas Emissions

Considering the information in the Climate Change Memorandum dated April 2022, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Greenhouse Gas Emissions
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less Than Significant Impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less Than Significant Impact

Affected Environment

The project is in a rural area, with a mostly natural resources-based agricultural and tourism economy. State Route 168 is the main transportation route to and through the area for both passenger and commercial vehicles. The nearest alternate route is State Route 41, 22 miles to the northwest. Traffic counts are low.

The existing right-of-way is bordered on both sides by land owned by Southern California Edison. To the northwest, there is a dense stand of trees damaged by wildfire in 2020. To the southeast lies the Shaver Lake shoreline.

The project is within the jurisdiction of the Fresno Council of Governments. The 2018 Regional Transportation Plan, Chapter 3—Sustainable Communities Strategy: People, Choices, Community, states that the plan will reduce greenhouse gas emissions by focusing growth in developed areas, moderately increasing residential densities, encouraging infill development, protecting open space and agricultural land, and providing transportation alternatives to the private automobile.

Environmental Consequences

Greenhouse gas emissions impacts of non-capacity-increasing projects like the Shaver Lake Viaduct project are considered less than significant under CEQA because there would be no increase in operational emissions.

However, construction equipment, traffic delays, material processing and transportation, and delivery may generate short-term greenhouse gas emissions during 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. Carbon dioxide emissions generated from construction equipment were estimated using the Caltrans

Construction Emissions Tool v1.1. The estimated emissions would be 1,126 tons of carbon dioxide per 550 working days.

All construction contracts include Caltrans Standard Specifications related to air quality. Sections 7-1.02A and 7-1.02C, Emissions Reduction, require contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all California Air Resources Board emission reduction regulations. Section 14-9.02, Air Pollution Control, 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 greenhouse gas emissions.

While some construction greenhouse gas emissions would be unavoidable, implementing standard conditions or Best Management Practices designed to reduce or eliminate emissions as part of the project would reduce impacts to less than significant.

Avoidance, Minimization, and/or Mitigation Measures

The following measures will also be implemented in the project to reduce greenhouse gas emissions and potential climate change impacts from the project:

- Recycle water: Reduce construction water consumption of potable water. Encourage recycled water for construction. This would be a part of the project contract as Caltrans Standard Specification 10-6.
- Reduce construction waste. This would be a part of the project contract as Caltrans Standard Specification 14-10.03, requiring Solid Waste Disposal and Recycling Report and a Recycled Materials Report demonstrating efforts to minimize landfill material.
- Long-life pavement: Minimize life-cycle costs by designing long-lasting pavement structures. This would be incorporated into the project design during the project design phase.
- Construction scheduling: Increase lane closure duration to reduce necessary mobilization efforts or lengthen the work week to maximize construction seasons. This would be incorporated into the Transportation Management Plan prepared during the project design phase.
- Fuel efficiency: Encourage improved fuel efficiency from construction equipment by maintaining equipment in proper working condition, using the right size equipment for the job, and using equipment with new technologies. This would be a part of the project contract as Caltrans Standard Specification 14-9.

- Reduce the need for the transport of earthen materials by balancing cut and fill quantities. This would be addressed during the project design phase.
- Provide construction personnel with the knowledge to identify environmental issues and best practice methods to minimize impacts to the human and natural environment. Supplement existing training with information from the following link regarding methods to reduce greenhouse gas emissions related to construction:
<https://www.sustainablehighways.org/122/project-development.html>.

2.1.9 Hazards and Hazardous Materials

Considering the information in the Initial Site Assessment dated November 2021, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for 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?	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	No Impact

Question—Would the project:	CEQA Significance Determinations for Hazards and Hazardous Materials
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	No Impact
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	No Impact

2.1.10 Hydrology and Water Quality

Considering the information in the Water Compliance Memorandum dated February 2022, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Hydrology and Water Quality
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water or groundwater quality?	Less Than Significant Impact
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	No Impact
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 onsite or offsite;	Less Than Significant Impact
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite;	No Impact

Question—Would the project:	CEQA Significance Determinations for Hydrology and Water Quality
(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	No Impact
(iv) impede or redirect flood flows?	No Impact
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	No Impact
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	No Impact

Affected Environment

The project area lies in the San Joaquin River Hydrologic Unit. The watershed affected by the project is the Stevenson Creek-San Joaquin River. Shaver Lake is an artificial lake on Stevenson Creek, in the Sierra National Forest of Fresno County, California. Several smaller streams also flow into the lake, and the lake receives water from the tunnels of Southern California Edison's Big Creek Hydroelectric Project.

The lake was formed with the construction of Shaver Lake Dam, which was built by Southern California Edison and completed in 1927. Some water from the lake is discharged into Stevenson Creek for fish and other wildlife, but the rest is diverted to Big Creek, where it powers several hydroelectric plants in succession.

The Central Valley Regional Water Quality Control Board adopted a *Water Quality Control Plan for Sacramento and San Joaquin River Basins*, Fifth Edition, May 2018 (referred to below as the Basin Plan), that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan.

The Basin Plan does not specifically identify beneficial uses for Shaver Lake and North Fork Stevenson Creek but does identify present and potential uses for the San Joaquin River from its sources to Millerton Lake, to which Shaver Lake and North Fork Stevenson Creek are tributaries. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution Number 88-63, which establishes state policy that all waters, with

certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply.

Environmental Consequences

Roadway construction and maintenance activities can have direct impacts on both supply and water quality characteristics of the project area. Impacts may include the erosion of disturbed soils and the chemical pollutants associated with roadway construction and maintenance practices. In addition, the operation of roadways causes other potential pollution sources created by the chemical and biological contaminants present in roadway stormwater runoff.

The project would not increase the impervious surface area of the project location. However, the extensive grading and excavation required to remove the roadway, gabion wall, and hillside to construct the proposed viaduct could result in erosion and concentrated flow conveyance during storms, resulting in onsite and offsite erosion and downstream sedimentation into surface waters. Other construction-related impacts could occur due to accidental spills or poor management of handling solid wastes, hazardous materials, fuels, and other potential chemicals used during road excavation and replacement of new culverts. Poorly maintained vehicles and heavy equipment leaking fuel, oil, antifreeze, or other fluids on the construction site are also potential sources of stormwater pollution and soil contamination.

Two general strategies are recommended to prevent construction-related products to migrate offsite. First, erosion control procedures should be implemented for those areas that must be exposed. Second, the area should be secured to control the offsite migration of pollutants. These Best Management Practices would be required in the Stormwater Pollution Prevention Plan to be prepared before the start of project construction. When properly designed and implemented, these practices are expected to reduce or eliminate the potential for short-term construction-related impacts.

Per the National Pollution Discharge Elimination System Stormwater Program, the project would be required to comply with existing regulatory requirements to prepare a Stormwater Pollution Prevention Plan designed to control erosion and the loss of topsoil to the extent practicable using Best Management Practices that the Regional Water Quality Control Board has deemed effective in controlling erosion, sedimentation, and runoff during construction activities. The specific controls are subject to review and approval by the Regional Water Quality Control Board and are an existing regulatory requirement. These activities would be addressed in the design and construction phases of the project.

Any potential impacts (erosion, accidental spills of hazardous material, and disruption to natural drainage) must be addressed, eliminated, or minimized to the maximum extent practicable during the design and construction phases

of the project by incorporating the appropriate permanent and temporary Best Management Practices into the project.

Because the project would disturb over 1 acre of soil, the following would be required:

- A Notification of Intent is to be submitted to the appropriate Regional Water Quality Control Board at least 30 days before the start of construction.
- A Stormwater Pollution Prevention Plan is to be prepared and implemented during construction to the satisfaction of the Resident Engineer.
- A Notice of Termination will be submitted to the Regional Board upon completion of construction and site stabilization. A project will be considered complete when the criteria for final stabilization in the Construction General Permit are met.

By incorporating the practices listed above, the project will have less than significant impacts on water quality during and after construction.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is anticipated.

2.1.11 Land Use and Planning

The project would convert forest land to non-forest use. However, the project would not physically divide an established community and would not cause a significant environmental impact due to a conflict with the Fresno County General Plan or any other policy or regulation meant to avoid or mitigate an environmental effect. Considering this information, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Land Use and Planning
a) Physically divide an established community?	No Impact
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?	No Impact

2.1.12 Mineral Resources

Considering the information on the California Department of Conservation Online Mineral Land Classification Interactive Map accessed in February 2022, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for 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?	No Impact
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	No Impact

2.1.13 Noise

Considering the information in the Traffic Noise Assessment dated March 2022, the following significance determinations have been made:

Question—Would the project result in:	CEQA Significance Determinations for 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?	No Impact
b) Generation of excessive groundborne vibration or groundborne noise levels?	No Impact
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No Impact

2.1.14 Population and Housing

The project would install a viaduct on a new alignment and would not directly or indirectly induce substantial unplanned population growth in the area. The project would acquire additional right-of-way, but no person or business would be relocated or displaced. Considering the scope and location of the project within a rural setting, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Population and Housing
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	No Impact
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No Impact

2.1.15 Public Services

The project would install a viaduct on a new alignment and would not trigger the need for new or modified public services. Considering the scope and location of the project in a rural setting, the following significance determinations have been made:

Question:	CEQA Significance Determinations for Public Services
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	
Fire protection?	No Impact
Police protection?	No Impact
Schools?	No Impact
Parks?	No Impact
Other public facilities?	No Impact

2.1.16 Recreation

The project would install a viaduct on a new alignment. The Shaver Lake Marina, the Shaver Lake shoreline, and various other recreational areas and trails occur near the project area. But, the project would not alter roadway

capacity or traffic patterns in a way that might increase the use of the existing recreational facilities nor require the construction or expansion of recreational facilities. State Route 168 would remain open during construction, and all existing recreational facilities would be accessible during and after construction. Considering this information, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Recreation
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	No Impact

2.1.17 Transportation

The project would install a viaduct on a new alignment. The project would not conflict with any transportation program, plan, ordinance, or policy and would have no impact on vehicle miles traveled. The project would not increase hazards due to a geometric design feature or incompatible uses and would not result in inadequate emergency access. State Route 168 would remain open to the public and emergency vehicles during construction. The public would still be able to tow boats and other recreational equipment through the project area. The project is exempt from vehicle miles traveled analysis under Senate Bill 743 because the project would not lead to a substantial or measurable increase in roadway capacity, according to the California Governor's Office of Planning and Research, 2018 Technical Advisory. Considering this, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Transportation
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	No Impact
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	No Impact

Question—Would the project:	CEQA Significance Determinations for Transportation
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	No Impact
d) Result in inadequate emergency access?	No Impact

2.1.18 Tribal Cultural Resources

Considering the information in the Historic Property Survey Report dated October 2021, the following significance determinations have been made:

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:

Question:	CEQA Significance Determinations for Tribal Cultural Resources
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	No Impact
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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	No Impact

2.1.19 Utilities and Service Systems

Considering the project would not create a demand for new or expanded utilities and service systems and have no impact on a utility or service system supply, or generate solid waste in excess as described in “d” below, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Utilities and Service Systems
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	No Impact
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	No Impact
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?	No Impact
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?	No Impact
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	No Impact

2.1.20 Wildfire

Considering the information in the Climate Change Memorandum dated April 2022, the following significance determinations have been made:

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

Question—Would the project:	CEQA Significance Determinations for Wildfire
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	No Impact
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant	No Impact

Question—Would the project:	CEQA Significance Determinations for Wildfire
concentrations from a wildfire or the uncontrolled spread of a wildfire?	
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	No Impact
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	No Impact

2.1.21 Mandatory Findings of Significance

Question:	CEQA Significance Determinations for Mandatory Findings of Significance
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	No Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	No Impact

Question:	CEQA Significance Determinations for Mandatory Findings of Significance
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	No Impact

Appendix A Title VI Policy Statement

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY

Gavin Newsom, Governor

DEPARTMENT OF TRANSPORTATION

OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
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FAX (916) 653-5776
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Making Conservation
a California Way of Life.

September 2021

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."*

Caltrans will make every effort to ensure nondiscrimination in all of its services, programs and activities, whether they are federally funded or not, and that services and benefits are fairly distributed to all people, regardless of race, color, or national origin. In addition, Caltrans will facilitate meaningful participation in the transportation planning process in a nondiscriminatory manner.

Related federal statutes, remedies, and state law further those protections to include sex, disability, religion, sexual orientation, and age.

For information or guidance on how to file a complaint, or obtain more information regarding Title VI, please contact the Title VI Branch Manager at (916) 324-8379 or visit the following web page:
<https://dot.ca.gov/programs/civil-rights/title-vi>.

To obtain this information in an alternate format such as Braille or in a language other than English, please contact the California Department of Transportation, Office of Civil Rights, at 1823 14th Street, MS-79, Sacramento, CA 95811; PO Box 942874, MS-79, Sacramento, CA 94274-0001; (916) 324-8379 (TTY 711); or at Title.VI@dot.ca.gov.

A blue ink signature of Toks Omishakin, consisting of a stylized 'T' followed by a series of loops and a final flourish.

Toks Omishakin
Director

"Provide a safe and reliable transportation network that serves all people and respects the environment."

List of Technical Studies Bound Separately (Volume 2)

Air Quality Memorandum, March 2022

Energy Memorandum, April 2022

Traffic Noise Assessment, March 2022

Water Compliance Memorandum, February 2022

Natural Environment Study (Minimal Impacts), March 2022

Historic Property Survey Report, October 2021

- Includes a summary of the Archaeological Survey Report, October 2021

Initial Site Assessment, November 2021

Preliminary Site Investigation, October 2021

Preliminary Geotechnical Design Report, December 2021

Paleontological Identification Report, February 2022

Visual Impact Assessment, April 2022

To obtain a copy of one or more of these technical studies/reports or the Initial Study, please send your request to:

Trais Norris
District 6 Environmental Division
California Department of Transportation
2015 East Shields Avenue, Suite 100, Fresno, California 93726

Or send your request via email to: trais.norris@dot.ca.gov

Or call: 209-601-3521

Please provide the following information in your request:

Project title: Shaver Lake Viaduct

General location information: On State Route 168 from post miles 48.9 to 49.75 in Fresno County

District number-county code-route-post mile: 06-FRE-168-PM 48.9-49.75

Project ID/EA number: 0620000065/06-1A090