

SR 29 Napa River Bridge Replacement Project

Calistoga, California
DISTRICT 4 – NAP – 29 (PM 37.03 Bridge #21-0018)
E.A. 3G6400/Project ID 0412000134

Initial Study with Proposed Mitigated Negative Declaration



Prepared by the
State of California Department of Transportation



October 2014

General Information about This Document

What's in this document:

The California Department of Transportation (Caltrans) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND), which examines the potential environmental impacts of the alternatives being considered for the proposed project located in Napa County, California. 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 this document. Additional copies of this document and related technical studies are available for review at the District office, 111 Grand Ave., Oakland, CA 94612. Electronic copies are available online at <http://www.dot.ca.gov/dist4/envdocs.htm>.

We welcome your comments. If you have any comments about the proposed project, please attend the **public meeting at the City of Calistoga Community Center on October 23, 2014** and/or submit your comments to Caltrans, District 4, 111 Grand Ave., Oakland, CA 94612.

Please send your written comments to Caltrans by November 9, 2014. Submit email comments to Caltrans at kit.stycket@dot.ca.gov or send by postal mail to Caltrans District 4, Attn: Yolanda Rivas, PO Box 23660, MS 8B, Oakland, CA 94623-0660. Hard copies or compact disks of the document are available by writing to the above mailing address. **Be sure to submit comments by the deadline: November 12, 2014.**

What happens next:

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

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: Yolanda Rivas, Environmental Planning, Caltrans District 4 PO Box 23660, MS 8B, Oakland, CA 94623-0660, (510) 286-6216 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

04-NAP-29-PM 37.03
E.A.3G6400
ID-0412000134

State Route 29 Napa River Bridge Replacement Project in Napa County, (post mile 37.03),
E.A. 3G6400

INITIAL STUDY Proposed Mitigated Negative Declaration

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,

Date of Approval

Melanie Brent
Deputy District Director
Environmental Planning and Engineering
District 4
California Department of Transportation

CEQA Lead Agency

PROPOSED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to replace Napa River Bridge # 21-0018, on State Route (SR) 29, in Napa County, to address scour conditions and meet current Caltrans highway design standards.

Determination

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

Caltrans has prepared an Initial Study (IS) for this project, and pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons:

The proposed project would have no effect on the following resources: Traffic and Transportation, Cultural Resources, Hazardous Materials, Community Character and Cohesion, Public Services, Scenic Resources, and Utilities. The project is consistent with state, regional and local plans and programs.

In addition, the proposed project would have less than significant affects to Aesthetics/Visual, Biological Resources, Hydrology/Water Quality.

Melanie Brent
Deputy District Director
District 4
California Department of Transportation

Date

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SUMMARY

Caltrans proposes to construct a single-span bridge (72 feet 10 inches-wide x 76 feet-long) that will replace the existing Napa River Bridge #21-0018 (72 feet 10 inches-wide x 62 feet-long), and will span approximately 76 ft across the Napa River. Due to the center pier's skew angle with the channel, water is eroding a hole (scour) in the creek bed at the front of the pier.

The height of the bridge deck is lower than the water level expected during a 100-year flood event. During that magnitude of flow, water pressure on the bridge and the scour around the pier could combine over the long-term to undermine the center pier.

Replacing the current bridge with a single span structure that meets Caltrans current design standards will eliminate the long term scour problem, enhancing roadway user safety. This Project will address the concerns of Caltrans Division of Engineering Services (DES) Structure Hydraulics Office, which recommends replacement of the bridge with a single-span structure.

Project Information

The preferred alternative will be constructed on the existing alignment with pre-cast/pre-stressed (PC/PS) I-girders or box girders to accelerate construction. A Girder-type selection will accelerate construction, accommodate existing fixed-location utilities, and optimize freeboard. The new bridge would be built spanning approximately 76 ft across the Napa River with foundations on opposing banks. The bridge will provide two standard 12-foot travel lanes with shoulders to accommodate existing bus stops and 6 foot-wide sidewalks.

Location

The project is located on the Napa River Bridge # 21-0018, on State Route (SR) 29, Post mile 37.03, in Calistoga, Napa County.

Figure 2. Project Location

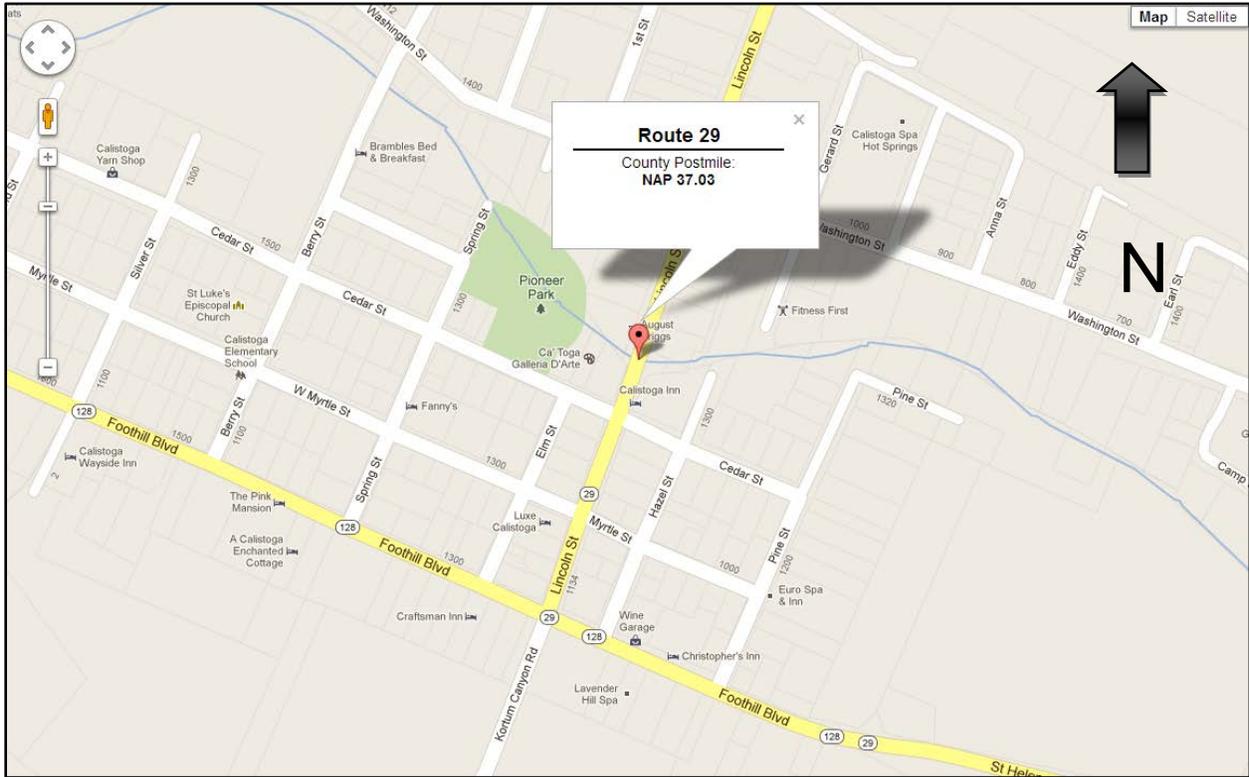


Figure 3. Existing Cross Section Napa River Bridge

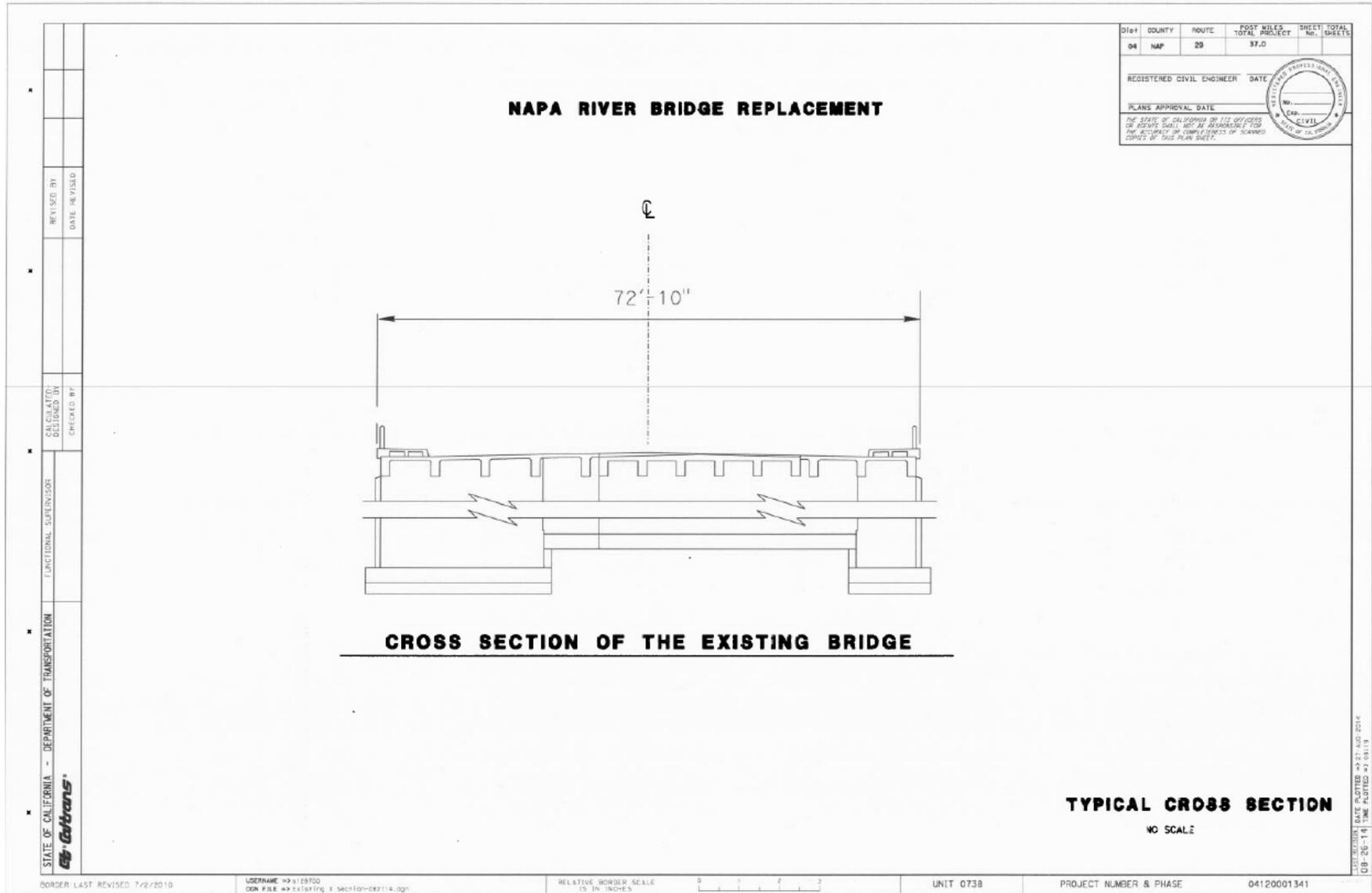
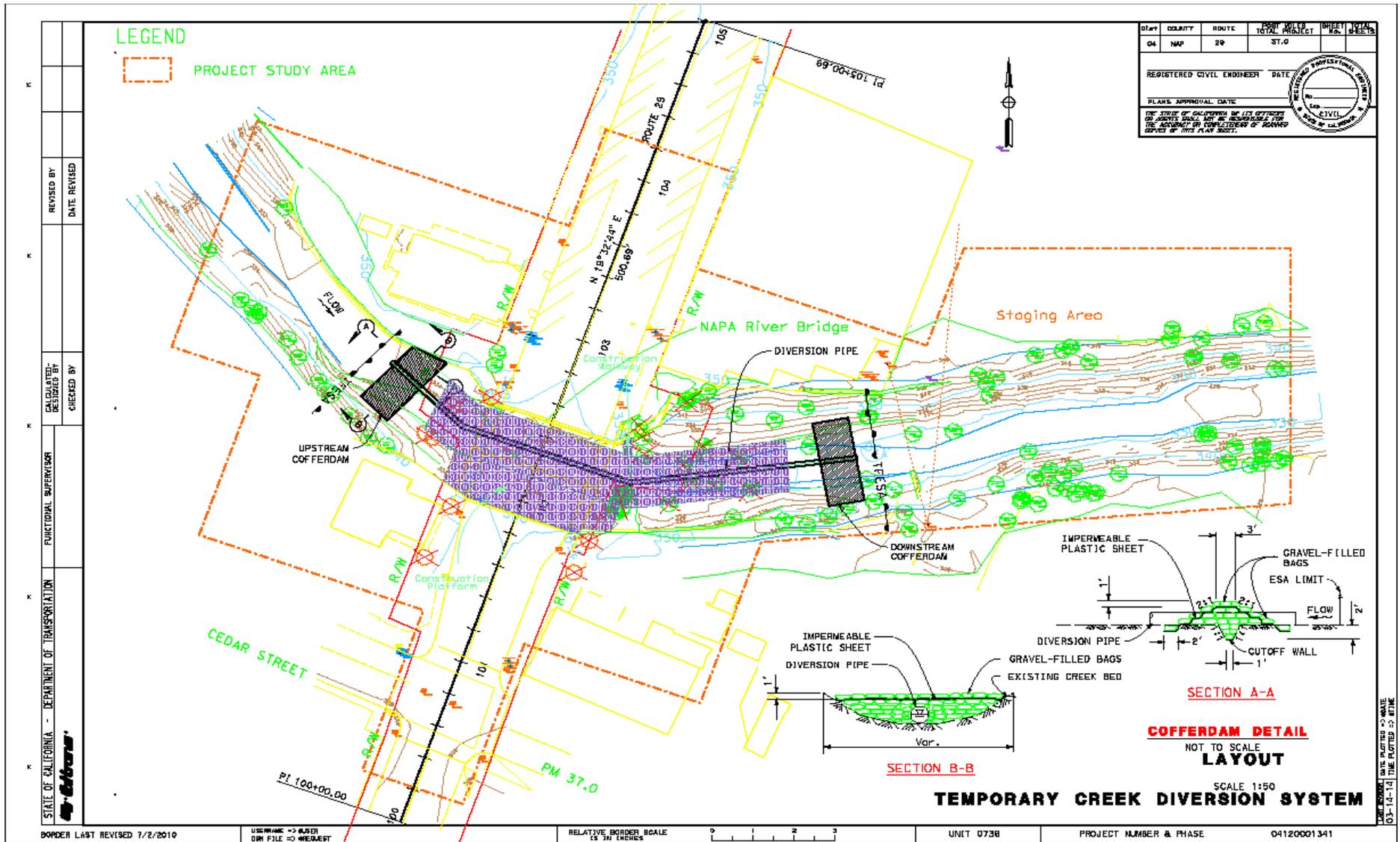


Figure 4. Temporary Creek Diversion system



CHAPTER 1- Proposed Project

1.1 Introduction

The Department of Transportation (Caltrans) is the lead agency under the California Environmental Quality Act (CEQA). Caltrans proposes to replace Napa River Bridge # 21-0018, on State Route (SR) 29, in Napa County. The project is located at post mile PM 37.03.

The existing bridge was built in 1919. It is a 2-span bridge with clear span lengths of 28.3 feet (ft) and total bridge length of approximately 61.8 ft. The bridge consists of reinforced concrete T-beams supported on Unreinforced Masonry (URM) abutment walls and a reinforced concrete pier on a spread footing. Originally, it was approximately 40.7 ft wide (See Figure 3). In 1952, the bridge was widened on both sides to the current 72.8-foot width which accommodated one travel lane in each direction and wide outside shoulders for bus stops for each direction. The widened portion consists of reinforced concrete T-beams supported on reinforced concrete abutments and pier, all founded on spread footings.

The new bridge would be built to current Caltrans highway design standards and maintain the existing alignment and profile. The bridge deck would be 72 feet 10 inches-wide, with two 12 foot-wide lanes, 16 foot 9 inches-wide outside shoulders, and 6 foot-wide sidewalks. The proposed railings are steel type California ST-10. On both sides of the bridge, 19.3 foot-long belvederes will be constructed to provide outlooks for pedestrians. Each belvedere extends a maximum of 2 feet from the edge of the bridge deck, forming an arc with a radius of approximately 24.4 feet.

1.2 Purpose and Need

The need for this project arises from the fact that the existing bridge has experienced scour damage and must therefore be either repaired or replaced. Scour is the removal of earth supporting the bridge foundation caused by water turbulence.

The project is intended to achieve the following purpose:

- Mitigate scour damage: The goal is to correct the scour damage problem at the Napa River Bridge, both immediately and long term.
- Improve operating efficiency: Highway design standards have changed since the Napa River Bridge was constructed in 1919 and widened in 1952. Achieving current standards would be beneficial from the point of view of highway operations, maintenance and long-term use by the general public.

1.3 Project History

In 2002, the Caltrans Structure Maintenance and Investigations and Structure Hydraulics Office determined that the bridge is scour critical. Due to the center

pier's skew angle with the channel, water is eroding a hole (scour) in the creek bed at the front of the pier.

The height of the bridge deck is lower than the water level expected during a 100-year flood event. During that magnitude of flow, water pressure on the bridge and the scour around the pier could combine over the long-term to undermine the center pier.

Potential scour conditions at the bridge were determined in accordance with the FHWA Technical Advisory T5140.23, "Evaluating Scour at Bridges." Another evaluation documented in a 2010 Bridge Hydraulics Report confirmed that the scour conditions remain, and that the bridge is still considered scour critical due to conditions at Pier 2.

In addition to the scour issues, the original 1919 structure is founded on URM abutments and replacing the bridge under current American Association of State Highway and Transportation (AASHTO) design standards would be beneficial from the point of view of highway operations, maintenance and long-term use by the general public.

CHAPTER 2 - Project Alternatives

2.1 Alternatives

There are two alternatives being considered for the project. The build and no-build alternatives. The build alternative proposes to construct a new single span bridge on the existing alignment. The no-build alternative would leave the existing bridge in place. No other projects are proposed on the existing bridge. While the no-build alternative would not meet the purpose and need of the project, it serves as the baseline against which to compare the proposed build alternative. The alternatives are discussed below.

2.2 Build Alternative

The build alternative is a 76-foot-long single-span bridge, constructed on the existing alignment with pre-cast/pre-stressed (PC/PS) I-girders or box girders to accelerate construction. The new bridge would be built on its existing alignment spanning approximately 76 ft across Napa River with foundations on opposing banks. The bridge will provide two standard 12-foot travel lanes, 16 foot 9 inches-wide outside shoulders, and 6 foot-wide sidewalks.

The new abutments would be constructed directly behind the existing abutment walls and founded on cast-in-drilled-hole (CIDH) piles, minimum length of approximately 75 feet, with steel casings. A new soil-nail wall will be constructed in front of the existing abutment walls, with the nails passing through the existing walls and anchoring underneath the existing roadway. The limit of the new wall is from edge-of-bridge deck to edge-of-bridge deck.

The four existing retaining walls directly adjacent to the bridge abutments may not need to be replaced assuming the contractor can protect the walls from damage during construction of the new bridge. The proposed bridge railings are steel type California ST-10 and resemble the existing steel baluster rails, and complement the aesthetics of the surrounding architecture. In addition to architecturally treating the bridge, belvederes would be constructed on both sides of the bridge to provide outlooks for pedestrians. The proposed belvederes are 19.3 feet-long, and extend a maximum of 2 feet from the edge of the deck, forming an arc with a radius of approximately 24.4 feet.

Construction Methodology

The new bridge would be built on the existing alignment, spanning approximately 76 ft across Napa River with foundations on opposing banks. The bridge would be replaced in stages, allowing two-way traffic to continue during construction, though some construction activities will require temporary one-way traffic or night closures. Staging would be sequenced such that the 1919 portion of the bridge deck would be removed in its entirety. As the 1919 deck is supported on URM abutments, it is preferable to minimize its use during stage construction. This also requires

temporary modification and removal of the sidewalks adjacent to the bridge to accommodate construction access and maintain two-way traffic with minimum traffic lane widths.

Cranes

To minimize the impacts to sensitive habitat, construction equipment will be lowered using a crane from the existing bridge deck and approaching roadways. A minimum space of 30' by 100' beyond the bridge deck on both sides will be needed for the temporary closure to provide space for the crane.

Timber Mat System

A 30 foot-wide construction platform (timber mat system), will be installed to create a flat working surface during construction. The timber mat system consists of four-12" by 12" timbers bolted together in various length to create a flat working surface for construction activities. The length of the working areas will extend 100 feet from the edge at the east side, and 25 feet at the west side of the bridge deck within the creek. A 5 feet wide footpath (stairway) access will also be built for contractor to access to the creek bed from the northeast side of the bridge. Some trees may be removed or trimmed, as necessary, to provide space for construction activities and swing radius of the pile rig and crane.

Temporary Diversion and Cofferdams

A temporary water diversion system will be installed to allow for work in the river during the dry season. It will keep the work area dry by conveying river water into a diversion pipe with gravel-filled cofferdams or a similar system. The cofferdam portion of the temporary water diversion extends 50 feet beyond the edge of the construction work area.

The temporary water diversion system would consist of a diversion pipe with temporary cofferdams located at the upstream and downstream ends. The cofferdams would be constructed across the existing creek channel with gravel-filled bags wrapped in impermeable plastic sheeting or a similar system. A cut-off wall would be provided at both the upstream and downstream cofferdams to reduce seepage into the working area. The cofferdams would be assembled and removed in each of the two construction seasons (see Figure 4).

Pile Driving

The pile driving rig and crane, which will be situated mainly on the bridge approaches, will have a reduced swing radius because of the limited construction staging area and surrounding buildings. Due to this equipment limitation from the staging restrictions, the construction of the CIDH piles will require, at the minimum, one-way traffic control at the bridge and, at most, full closure of the bridge with work done during the night. Pile material delivery and installation of the PC/PS girders will require temporary full closure of the bridge. For operations requiring full night closure of the bridge, traffic will be re-routed per an approved detour plan.

Bridge Demolition

Access to the river bed for demolition activities will be via alternating sides of the bridge deck. The original 1919 bridge deck and eastern half of the 1952 widened

bridge deck and associated wingwalls will be demolished in Stage II. The corresponding pier will be demolished to at least 3 ft below existing channel grade. The remaining western half of the 1952 widened bridge deck and wingwalls will be demolished in Stage III. A falsework platform will be suspended beneath the existing bridge to capture any construction debris from the demolition work. The bridge deck will be saw-cut into individual T beams at each span, lifted, and hauled away. The pier will be saw-cut into smaller pieces and hauled away. The existing abutment walls and adjacent four retaining walls will be protected and will remain in place. Caltrans contractors will dispose of demolition debris at a certified landfill.

The proposed single-span bridge (72 ft 10 in wide x 76 ft long) will be built in-place of the existing concrete bridge (62 ft x 72 ft 10 in) and will span approximately 76 ft across the Napa River. When completed the proposed bridge will provide two standard 12-ft travel lanes and 16 foot 9 inches shoulders.

The single-span slab bridge would be built on the existing alignment with PC/PS concrete I-girders or box girders to accelerate construction. The new abutments would be constructed directly behind the existing abutment walls and founded on CIDH piles, with a minimum length of approximately 75 ft, with steel casings.

Construction Sequence

After temporary Type K railing and all traffic control devices are in place construction would commence with clearing and grubbing of the existing vegetation. Below is the proposed construction sequence for building the new bridge:

Stage I (Year 1)

Modify southbound sidewalk in preparation for Stage II traffic. This modification extends to Cedar Street on the south side of the bridge and approximately 150 ft to the north of the bridge.

Stage II (Year 1)

1. Place temporary K-rails and switch two-way traffic onto the southbound side of the existing bridge.
2. Modify northbound sidewalk from south of bridge to Cedar Street to provide construction staging and access area.
3. Rotate steel casings into ground for abutment cast-in-drilled-hole (CIDH) piles (approximately 75 ft minimum length). Place steel reinforcement cage and pour concrete to complete the pile.
4. Drill holes for soil-nails during the dry season through the existing abutment walls and underneath the roadway. Place soil-nails. This operation can be done concurrently with the pile installation operation, though it is preferable to install soil-nails after piles are constructed and their locations known.
5. Cast reinforced-concrete wall in front of existing abutment walls, which will embed the soil-nail anchors.
6. Demolish existing wingwalls and construct the abutment seats/diaphragm/wingwalls using cast-in-place reinforced-concrete.

Remove the existing bridge deck and girders. Bridge deck cannot be removed until the bottom two rows of soil-nails are installed or temporary shoring is provided to support the top of the existing abutment wall.

7. If necessary, complete top row of soil-nail wall
8. Remove the existing pier wall.
9. Place precast/prestressed (PC/PS) girders. Cast intermediate diaphragms, end diaphragms, concrete deck and belvederes.
10. Construct California ST-10 rail (modified).
11. Reconstruct northbound sidewalk.

Stage III (Year 2)

1. Place temporary K rail and switch two-way traffic onto the Stage II portion of new bridge.
2. Repeat Stage II, Steps 2 through 11, to construct Stage III portion of new bridge.
3. Reconstruct southbound sidewalk.

Drainage Systems

Four drainage outfalls that terminate at the abutments would be replaced as needed, in accordance with Caltrans highway design standards.

1. Replace the 18-inch corrugated metal pipe from existing abutment 1 (east side) to the nearest upstream inlet; replace the nearest upstream inlet.
2. Replace the 24-inch reinforced concrete pipe from existing abutment 3 (west side) to the nearest upstream inlet; replace the nearest upstream inlet located at the southwestern corner of Lincoln and Cedar.
3. Replace the 30-inch vitrified clay pipe from existing abutment 3 (west side) to the nearest upstream inlet (currently capped); replace the capped inlet with a manhole.
4. Replace the existing manhole located at Lincoln Avenue and Cedar Street.

Revegetation

Tree and shrub planting would occur as a separate re-vegetation project to follow the bridge/roadway construction project as needed but replanting would occur within the Napa River Bridge Replacement Project study area. Any trees removed within the riparian corridor will be replaced according to the following ratios: 3:1 for all other native riparian trees that have a diameter at breast height (dbh) greater than 4 inches. Non-native trees will be compensated at a 1:1 ratio. After the completion of construction trees will be planted onsite in the Project area to the maximum extent feasible.

Proposed work will likely include, but not be limited to, amendment of the soil; installation of native trees, shrubs, and ground cover such as grasses or forbs species; caring for the planting to ensure a healthy, growing condition for the three-

year plant establishment period; in-kind replacement of suitable plants; weeding; rodent and other pest control; mowing; trash and debris removal; plant pruning and fertilizer application; plant basin mulching; and installation of foliage protectors as needed or as determined necessary during the three-year plant establishment period. Hand or truck watering will be used to establish plant materials.

Erosion Control

Temporary and permanent erosion control measures will be installed to protect disturbed soils, at various phases of highway planting construction. Erosion control will provide: highway facility protection, roadside slope stabilization, source control of any soil silts, reduction/management of any concentrated storm water flow conditions, and cover for disturbed soil areas from construction operations/staging impacts. Additionally, erosion control is necessary also to help meet water quality discharge requirements. Permanent erosion control will be achieved by installation of planting (trees, shrubs, groundcovers, and grasses) and other landscape materials (compost, mulches, and netting). Temporary erosion control will be achieved through placement of straw fiber rolls and organic/inorganic materials to cover soil areas and drain inlets. Compost will be used extensively to improve soil fertility, storm water infiltration, plants, rooting depth and water holding capacity, as well as reduce soil erosion and improve water quality. This project will incorporate the use of temporary construction site Best Management Practices (BMPs) and permanent erosion control BMPs.

Nonmotorized and Pedestrian Features, etc.

Standard sidewalks will be built on each side of the bridge and connected to the existing sidewalks on the roadways. During construction, the existing sidewalks adjacent to both ends of the bridge will be temporarily modified. Adjacent street parking will be temporarily removed. This will allow for a construction staging area directly adjacent to the bridge and to maintain two-way traffic during construction. During construction, at least one sidewalk on the bridge will be open to provide pedestrian access across the bridge. Construction will proceed simultaneously from both ends of the bridge to accelerate bridge replacement.

Bicycle travel will be accommodated during construction by providing the “Share the Road” signage for motorists and bicyclists to use the travel lane.

There are two bus stops, immediately next to the bridge; one in each traffic direction. These bus stops need to be relocated to accommodate shifting in traffic during stage construction. The City proposes to relocate the two bus stops to in front of AT&T building and near the corner of Myrtle/ Washington Street. The Napa County Transportation and Planning Agency is requesting that before relocating the bus stops, Caltrans will coordinate with them.

2.3 No Build Alternative

The No-Build Alternative analyzes project conditions if the proposed improvements were not constructed. This alternative does not meet the purpose and need of the project, but it provides a comparison to the build alternative. There are no other projects proposed at the Lincoln Street Bridge.

2.4 Alternatives Discussed But Eliminated From Further Analysis:

1. *Bridge Retrofit and Concrete Lined Channel*

This alternative proposed to fully line the existing channel with Portland cement concrete (PCC), and perform a retrofit of the existing structure.

Although a concrete channel liner provides a long term scour mitigation strategy, retrofitting the existing bridge is not considered cost effective strategy because it only provides a temporary solution.

CHAPTER 3 - Affected Environment, Environmental Consequences and Avoidance, Minimization, and/or Mitigation Measures

As a part of the scoping and environmental analysis conducted for the proposed project, the following environmental issues were considered and no impacts were identified. Consequently, there is no further discussion regarding these issues in this document.

- **Community Character and Cohesion** – As a structural replacement, the proposed project will not alter the character or cohesiveness of existing neighborhoods or communities.
- **Consistency with State, Regional and Local Plans and Programs** - The proposed project, under its purpose and need, is consistent with state, regional and local plans and programs, as well as transportation plans and programs. The project would not conflict with the implementation of the City of Calistoga Projects
- **Existing and Future Land Use**- The proposed project would not affect existing or future land uses. No acquisition of residential or commercial structures is anticipated.
- **Farmlands and Timberlands** – Historically, the proposed project area has been designated for highway use. There are no farmlands or timberlands within the project vicinity.
- **Growth** – The proposed project is a replacement of an existing bridge, not a modification to highway capacity, operation, or accessibility, which could influence growth.
- **Mineral Resources**- There are no known mining resources within the proposed project vicinity.
- **Parks and Recreation** – No parks or recreational facilities would be affected by the project.
- **Population and Housing**- The proposed project would not displace any existing housing or people with pre, during, or post construction activities.
- **Public Services**- The proposed project would not result in any permanent impacts to fire protection, police protection, schools, parks, or other public facilities. Caltrans would coordinate with City of Calistoga officials and the local CHP office regarding construction staging .

- **Wild and Scenic rivers-** The proposed project would not impact any wild or scenic rivers.

3.1 UTILITIES, EMERGENCY SERVICES AND RIGHT OF WAY

3.1.1 Affected Environment

There are a number of existing utilities within the project limits. According to the 1952 bridge as-built plans, the bridge carries the following utilities across the length of the bridge:

- 4-inch diameter Gas (West Side)
- 1.5-inch diameter Lighting Conduit (West Side Curb)
- 4 low voltage lines (West Side per Foundation Plan)
- 2-inch diameter Water (East Side Curb)
- 12-inch diameter Water (East Side)
- 3 telephone cables (East Side per Foundation Plan)

3.1.2 Environmental Consequences

Utility and Other Owner Involvement

All existing lighting conduits and electric poles close to or underneath the bridge will require relocation. Relocation of the water, telephone cables and gas lines underneath the existing bridge are also required.

The relocations would be the responsibility of utility companies and public agencies including Comcast, Pacific Gas and Electric Company (PG&E), AT&T, and City of Calistoga. Coordination with public agencies and utility companies is needed. Relocation plans with utility companies will be developed during the PS&E phase, and all utilities in conflict with the proposed project would need to be relocated before or during construction. Water line relocation would be included as part of this project. Utility relocations would be planned in a manner that will not cause adverse service disruptions.

Emergency Services

No law enforcement, fire, or other emergency services should be affected by the project. Caltrans would notify the local California Highway Patrol (CHP) office and the Fire Department weekly of upcoming closures. A Traffic Management Plan (TMP) is anticipated for the project and is discussed in the Avoidance, Minimization, and/or Mitigation Measures of the Traffic and Transportation/Pedestrian and Bicycle Facilities section of this chapter.

Right of Way Acquisitions

Caltrans would require permanent acquisition of approximately 100 square feet of land of APN# 011-232-004 in order to build the bridge barrier and approach slab. Approximately, 23,000 square feet of Temporary Construction Easements (TCE) will also be required for construction of the project.

3.1.3 Avoidance Minimization and/or Mitigation Measures

No avoidance, minimization, or mitigation measures are proposed.

3.2 TRAFFIC/PEDESTRIAN AND BICYCLE FACILITIES

3.2.1 Affected Environment

The existing facility at the bridge is a 2-lane bridge which allows bicycle access.

3.2.2 Environmental Consequences

There are two bus stops, immediately next to the bridge; one in each traffic direction. These bus stops need to be relocated to accommodate shifting in traffic during stage construction. The City proposes to relocate the two bus stops to in front of AT&T building and near the corner of Myrtle/ Washington Street. Caltrans would coordinate with The Napa County Transportation and Planning Agency prior to relocating the bus stops.

Standard sidewalks will be built on each side of the bridge and connected to the existing sidewalks on the roadways. During construction, the existing sidewalks adjacent to both ends of the bridge will be temporarily modified. Bicycle travel will be accommodated during construction by providing the “Share the Road” signage for motorists and bicyclists to use the travel lane.

Adjacent street parking will be temporarily removed to allow for a construction staging area directly adjacent to the bridge and to maintain two-way traffic during construction.

3.2.3 Avoidance, Minimization and/or Mitigation Measures

A TMP will be required to minimize construction-related traffic delays for this project. The proposed construction and improvements will include road work that requires lane closures and one-way traffic control during construction period. The TMP for the project will be developed and refined during the PS&E phase and supported by detailed studies to evaluate traffic operations. The need for necessary lane closures during off-peak hours or at night will be identified during the PS&E phase.

The TMP strategies are of a general nature and mitigate the overall level of congestion. The strategies are grouped into four broad transportation management strategies including:

- Public Information
- Motorist Information
- Incident Management
- Construction Strategies

Transportation management strategies that require action by the Contractor are described briefly in the TMP and presented in detail in the project Special Provisions. Transportation management strategies that are to be implemented by

Caltrans appear only in the TMP and are not included in the project Special Provisions.

The TMP may include press releases to notify and inform motorists, businesses, community groups, local entities, emergency services, and local officials of upcoming closures or detours. Various TMP elements such as Portable Changeable Message Signs and CHP Construction Zone Enhanced Enforcement Program (COZEEP) may be utilized to alleviate and minimize delay to the traveling public.

Proposed Detour Plan

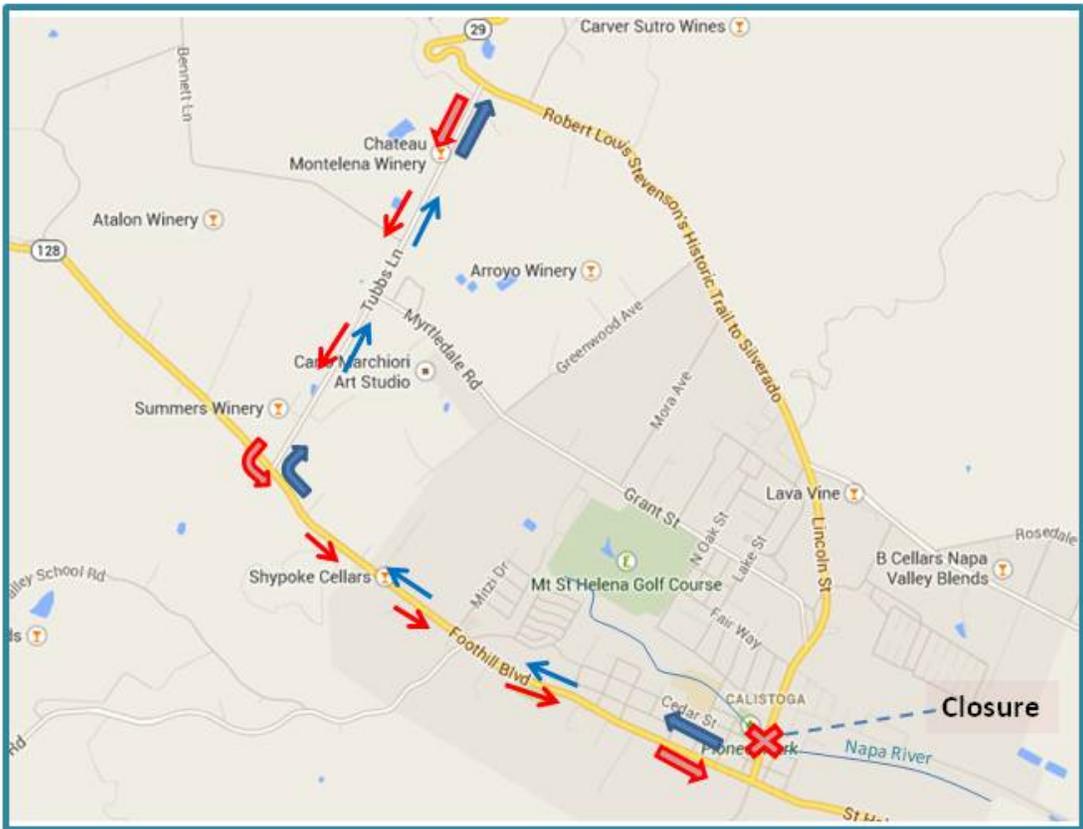
Northbound Traffic/Crossing:

This detour involves directing traffic at two intersections. At the intersection of Lincoln Avenue (SR 29) and Foothill Blvd (SR 128), traffic heading north bound will be directed to continue along Foothill Blvd. After travelling for 1.7 miles, the traffic reaches the intersection of Foothill Blvd and Tubbs Lane. At this intersection, the traffic will be directed to make a right turn on to Tubbs Lane. This traffic, after travelling for 1.4 miles on Tubbs Lane will turn left on to northbound SR 29. The total travel distance per the above detour is 3.1 miles.

Southbound Traffic/Crossing:

This detour involves directing traffic at two intersections. Firstly, at the intersection of Tubbs Lane and SR 29, traffic heading south bound will be directed to make a right on to Tubbs Lane. After travelling for 1.4 miles, the traffic reaches the intersection of Foothill Blvd and Tubbs Lane. At this intersection, the traffic will be directed to make left onward to Foothill Blvd. This traffic, after travelling for 1.7 miles on Foothill Blvd will continue on SR 128. The total travel distance per the above detour is 3.1 miles..

NAP 29 – PM 37.03
Napa River Bridge
Bridge Replacement Project



Detour Plan #1



3.3 VISUAL/AESTHETICS

3.3.1 Regulatory Setting

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]).

3.3.2 Affected Environment

The project is located in the Napa Valley wine country of Northern California and is a heavy tourist destination throughout the year. The landscape is characterized by small communities surrounded by vineyards and rolling hillsides. The land use within the corridor or project corridor is primarily urban, with a mix of residential, commercial and agricultural uses. The project corridor is defined as the area of land that is visible from, adjacent to, and outside the highway right-of-way, and is determined by topography, vegetation, and viewing distance. This project is located along a corridor that is eligible for scenic highway status.

The proposed project is located on SR 29, also known as Lincoln Street, between Cedar Street and Washington Street in the City of Calistoga, in Napa County, California. The bridge is part of the City of Calistoga's main street, a very busy commercial downtown with traffic speeds of 25 mph or less, pedestrian sidewalks and small businesses.

Caltrans completed a Visual Impact Assessment Technical Report for the proposed project in June 2014. This report is available for review upon request. The project location and setting provides for the context for determining the type of changes to the existing visual environment.



Existing Bridge Railing Design

3.3.3 Environmental Consequences

Visual impacts are determined by assessing changes to the visual resources, and predicting viewer response to those changes. The biggest visual change as a result of this project will be the updated vehicular barrier on the bridge. While the current railing recedes into the background, and viewers equate the bridge as more of a quiet river crossing, the new railing will announce the bridge's presence and viewers will be more aware of a bridge at this location.

The new railing also forces pedestrians to stand twenty inches away from the edge of the bridge, making it more difficult to view the riparian area. The new bridge design is very similar to the existing footprint with little to no deviation. The addition of the belvederes on both sides of the bridge could make the bridge look wider, while increasing the pedestrian space on the sidewalk.

1. The ST-10 barrier rail is vehicular oriented and would be more visually prominent than the current round tubular rail with pickets. The full depth of the rail, from the face of the vehicular horizontal rails to the edge of the bridge, will be twenty inches and will be mounted on a six inch high concrete curb which sits on top of the sidewalk. It is flanked on either ends by three-foot long concrete abutments.
2. The new rail would have pickets installed 4 inches on center and would increase the overall rail height to 42 inches for pedestrian safety. This barrier

creates a much more definitive vertical and horizontal line whereas, the current barrier is more open and retreats into the visual background.

3. The loss of mature trees adjacent to the bridge removes an existing buffer that will increase the visual presence of the new structure.
4. The visual quality of the existing corridor will be slightly altered by the proposed project. The existing railing recedes into the background, allowing the trees and vegetation behind it to become the focal point. The existing bridge is nearly unrecognizable by vehicular or pedestrian traffic while on Lincoln Street.

Existing Neighbors and Highway Users

Neighbors (people with views to the road) and highway users (people with views from the road) will be slightly affected by the proposed project. Neighbors and highway users will be exposed to a more prominent barrier rail, and potentially larger groups of people lingering on the bridge. Viewers to the bridge may be more sensitive to seeing the heavier bridge rail and feel as if they are now crossing a bridge whereas, the old barrier rail is much more pedestrian oriented.

It is anticipated neighbors and highway viewer response will be moderate. The viewer response for pedestrians on the bridge will be moderate-high due to the barrier, the visual clutter of the various barrier components as well as the increased distance it places between the pedestrians and the edge of the bridge.

It is anticipated that the average response of all viewer groups will be moderate.

Temporary Visual Impacts

Temporary impacts will include construction equipment, construction staging concrete barriers, detour signs, cones, flagging, etc. Additionally, temporary visual impacts will occur down in the creek in the form of water diversion channels, and construction equipment. The temporary visual impacts will occur over two seasons, the fall and summer construction window for two years.

During the wet season, the creek will not contain any creek diversion nor construction equipment. The other alternative for this project is the no-build alternative which would not change the existing visual conditions or appearance of the site in any way.

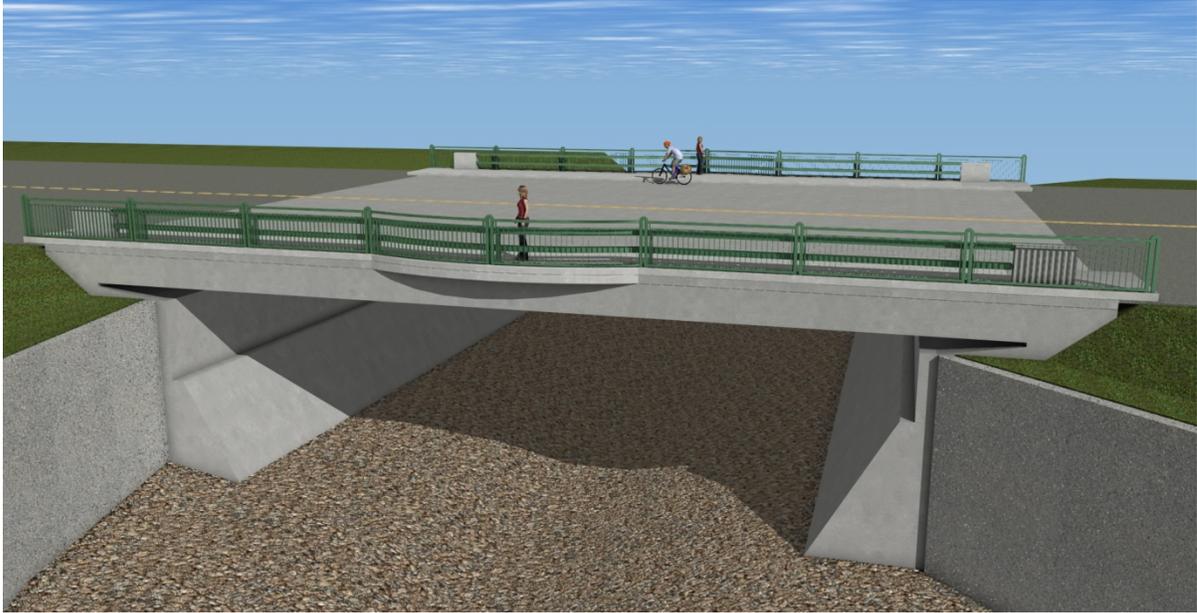


Pedestrian Belvedere on New Bridge Design

3.3.4 Avoidance, Minimization and/or Mitigation Measures

Avoidance or minimization measures have been identified that can lessen visual impacts caused by the proposed project. Environmental, aesthetic and architectural features shall be included in the project design. This section describes avoidance and/or minimization measures to address specific visual impacts. These will be designed and implemented with concurrence of the District Landscape Architect. The following measures to avoid or minimize visual impacts may be incorporated into the project:

- Aesthetic treatments that are context sensitive to the community will be incorporated in the bridge features and retaining walls;
- Pedestrian oriented features of the bridge will take into consideration the experience of the pedestrian user in scale, texture and color;
- ESA fencing to protect riparian vegetation from construction damage;
- Landscape revegetation to replace lost vegetation due to construction;
- Caltrans will engage the community in the elements of the bridge that can receive aesthetic treatment during the environmental process.



Perspective View of Proposed Bridge Design

3.4 CULTURAL RESOURCES

3.4.1 Regulatory Setting

“Cultural resources” as used in this document refers to all “built environment” resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Historical resources are considered under the CEQA, as well as CA Public Resources Code (PRC) Section 5024.1, which established the California Register of Historical Resources. PRC Section 5024 requires state agencies to identify and protect state-owned resources that meet National Register of Historic Places listing criteria. It further specifically requires Caltrans to inventory state-owned structures in its rights-of-way.

On January 1, 2014, the First Amended Section 106 Programmatic Agreement (PA) between the Advisory Council, FHWA, 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 Advisory Council’s regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to the Department. While the Caltrans Section 106 Programmatic Agreement was developed specifically for federal undertakings, Caltrans policy is to use the instructions outlined in its attachments for state projects and for compliance with CEQA.

3.4.2 Affected Environment

Area of Potential Effects

The Architectural and Archaeological Areas of Potential Effects (APE) were established on March 28, 2014 in consultation with Caltrans Office of Cultural Resources Professionally Qualified Staff (PQS) and the Caltrans Project Manager.

The Architectural and Archaeological APE for this study represents the maximum extent of project-related activities for the proposed undertaking based on project study limits defined by the project development team (PDT) and all proposed new right-of-way and temporary construction easements (TCE). For properties where a partial right-of-way acquisition or TCE is proposed, the entire parcel was included in the Architectural APE. The Architectural APE also includes properties adjacent to the footprint of the preferred build alternative which could potentially be indirectly affected by the proposed project.

The vertical APE represents the maximum vertical extent of project-related activities for the proposed undertaking; and though this varies throughout the project area depending on the project activity. The most substantial vertical impacts associated with the project are the installation of cast-in-drilled-hole (CIDH) piles that support the bridge abutments. These will extend approximately 75 feet below ground surface. Other vertical impacts include utility relocation trenching, approach slab, bridge abutments and vegetation clearing and replanting. The vertical impact of these activities ranges from approximately 1 to 12 feet.

Architectural History

The Historic Resources Evaluation Report (HRER) identified one National Register of Historic Places listed property within the study area—the Judge Augustus C. Palmer House at 1300 Cedar Street. The HRER determined that one additional built property was eligible for listing in the National Register of Historic Places—the building located at 1316 Lincoln Avenue. All other built properties within the study area were determined ineligible for listing in the National Register of Historic Places or were exempt from evaluation. The scope of work of the preferred build alternative would not pose direct or indirect (Including visual, auditory, and vibratory) effects to 1300 Cedar Street or 1316 Lincoln Avenue.

Archaeology

An Archaeological Survey Report (ASR) and Extended Phase 1 Investigation Report (XPI) were produced that presents the results of identification efforts consistent with Caltrans' regulatory responsibilities under the California Environmental Quality Act (CEQA) (Public Resource Code, Section 21000 et seq., revised 2005).

A records search was conducted at the Northwest Information Center (NWIC) of the California Information System in Rohnert Park, California, on April 19, 2013 (IC File No. 12-1226). An archaeological pedestrian survey of the APE found no evidence of prehistoric or historic archaeological deposits. The likelihood of finding cultural artifacts was severely restricted because much of the original ground surface is obscured by transportation infrastructure, buildings, and an asphalt parking lot. Due to poor surface visibility and the sensitive nature of the area, an XPI investigation was undertaken. The results of this investigation identified a previously unrecorded prehistoric site located within the Archaeological APE.

Native American Consultation

The Caltrans Office of Cultural Resources sent a letter describing the bridge replacement project on April 26, 2013 to the State of California Native American Heritage Commission (NAHC) requesting review of the Sacred Lands file for information on Native American cultural resources in the study area. A response received from the NAHC on May 20, 2013 failed to indicate the presence of Native American cultural resources in the immediate project area. The Commission enclosed a list of Native American individuals that may have information regarding cultural resources in the area. Letters dated June 10, 2013 were sent by the Caltrans Office of Cultural Resources to potentially interested individuals so as to provide a opportunity to communicate any questions, concerns or additional information regarding potential resources with Native American values in close proximity to the bridge. Follow up telephone calls were placed on July 31, 2013. Mr. Gabaldon, Chairperson of the Mishewal-Wappo Tribe of Alexander Valley was sent a letter on October 25, 2013 informing him that Caltrans was preparing to undertake an Extended Phase One investigation to determine the presence or absence of cultural resources in the project limits. The results of the XPI investigation and the project in general were discussed in a telephone conversation between Mr. Salsedo, of the Mishewal-Wappo Tribe of Alexander Valley and Benjamin Harris of Caltrans on December 2, 2013. A letter was mailed to Mr. Gabaldon, Chairperson of the

Mishewal-Wappo Tribe of Alexander Valley on July 30, 2014 that discussed the OCRS planned management and protection measures for CA-NAP-1128/H during bridge construction. The OCRS requested that if the tribe had any information or concerns regarding the planned protection measures or would like any additional information, to please contact the OCRS within 30-days.

3.4.3 Environmental Consequences

Based on the scope of work, the Caltrans Office of Cultural Resource Studies (OCRS) submitted a Historic Property Survey Report (HPSR) to the State Historic Preservation Officer (SHPO) on May 7, 2014 to obtain concurrence on eligibility determinations for built environment historic properties. The OCRS received concurrence from the SHPO on the built environment historic properties on June 17, 2014. As per Stipulation VIII.C.4 of the 2014 1st amended Programmatic Agreement (PA), the OCRS gained approval from Caltrans Cultural Studies Office (CSO) on May 2, 2014, to consider CA-NAP-1128/H eligible for inclusion in the National Register of Historic Places (NRHP) for the purposes of this project only, because evaluation was not possible.

In accordance with the PA the OCRS continued consultation with SHPO on the assessment of effects to CA-NAP-1128/H with preparation of a Finding of No Adverse Effect (FOE) document and sent to the SHPO in September 2014 for concurrence. The FOE determined that effects on the archaeological site do not meet the Criteria of Adverse Effect, per 36 CFR 800.5(a)(1) and the finding of No Adverse Effect with Non Standard Conditions for the project is appropriate.

3.4.4 Avoidance, Minimization and/or Mitigation Measures

An Environmentally Sensitive Area (ESA) and Archaeological Monitoring Area (AMA) Action Plan report has been generated due to the proximity of an archaeological site to the construction footprint. The ESA and AMA Action Plan documents the required protective measures, identifies responsible parties and their appropriate tasks, outlines an anticipated schedule and process and how the ESA and AMA will be implemented and enforced during construction. The ESA and AMA will be become part of the design commitments and specifications and will be delineated on construction plans as part of the final bid solicitation package. The ESA will be monitored by an archaeologist for the duration of the undertaking to ensure that the conditions attached to the ESA are not violated. Archaeological monitoring will follow protocols outlined in the Archaeological Monitoring Plan. A professional archaeologist will be assigned to monitor construction activity within the AMA. Caltrans will inform local Native Americans about the monitoring program and will maintain communication throughout the monitoring program. A Native American will be invited to participate in archaeological monitoring.

If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find. If human remains are discovered, State Health and Safety Code Section 7050.5 states that further

disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted.

Pursuant to CA Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC) who will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact Elizabeth McKee, Office Chief, Office of Cultural Resource Studies, at Caltrans, District 4, so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

3.5 WATER QUALITY: HYDROLOGY, FLOODPLAIN AND STORMWATER RUNOFF

3.5.1 Regulatory Setting

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.

State Water Resources Control Board- Regional Water Quality Control Boards:

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 regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments in their jurisdictions, and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants, which 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.

Caltrans NPDES Permit

The SWRCB issued Caltrans' Statewide NPDES Storm Water Permit (Order No. 99-06- DWQ, adopted July 15, 1999) to cover all Department projects and facilities in the state. Caltrans also received the new adapted Statewide NPDES Permit (Order No. 2012-0011-DWQ NPDES No. CAS000003), National Pollutant Discharge Elimination System (NPDES), Statewide Storm, Waste Discharge Requirements which will be effective on July 1, 2013.

In compliance with this permit, Caltrans 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 permit expired in 2004 and is currently undergoing SWRCB review for re-authorization.

However, Caltrans received a memo from the SWRCB on August 4, 2004 that the existing permit continues to be effective until a new permit is issued. Caltrans continues to strictly abide by its NPDES Storm Water permit requirements.

Caltrans' SWMP describes the minimum procedures and practices that Caltrans uses to reduce the pollutants it discharges from storm drainage systems that Caltrans owns or operates. It also outlines procedures and responsibilities for protecting water quality at Caltrans' facilities, including the selection and implementation of BMPs. In general, Caltrans is required to reduce pollutants in storm water discharges to the maximum extent practicable. Pollutants must be reduced using the Best Available Technology Economically Achievable (BATEA), using the Best Conventional Technology (BCT).

Caltrans' Permit requires Caltrans to also comply with the requirements of the Construction General Permit (CGP) described in Section 2.2.3. The project will be expected to follow the guidelines and procedures outlined in the SWMP.

3.5.2 Affected Environment

The project is part of the Napa River Watershed and Upper Napa River Sub-watershed. The Upper Napa River Watershed extends from the northern headwaters of the Napa River on Mount St. Helena, to Howell Mountain to the east, and Sulpher Creek to the west. The Napa County Flood Control and Water Conservation District is the local government agency that provides water resource management.

Hydrology & Drainage

The project is located within San Francisco Bay Regional Water Quality Control Board (RWQCB or Region R-2) San Pablo Hydrologic Unit, Napa River Hydrologic Area and Undefined (Hydrologic Sub-Area 206.50) with a watershed area of approximately 266,735 acres.

The average annual rainfall at this location is approximately 38 inches per the City of Calistoga. The Napa River watershed at the project site is approximately 21.6 square miles with a 100 year flow of 12,000 cfs. The Napa River flows in a southeasterly direction through the project site and ultimately drains into San Pablo Bay.

Floodplains

As shown on FEMA Map No. 06055C0229E dated September 26, 2008, the project site is located within Zone AE of the FEMA Base (100 year) floodplain, meaning that the base flood elevations have been determined. Also, a floodway has been identified for the Napa River within the project limits. The floodway, which includes the channel plus any adjacent floodplain areas identified, must be kept free of encroachment so that the base flood can be conveyed without substantial increases in flood heights. See the attached FEMA map. At the project site, the base flood elevation is approximately 350.5' (NAVD88) or 347.6' (NGVD29). The Napa River Flood Profile and Floodway Data for the Napa River at Lincoln Avenue/SR 29 from the FIS are attached. The Napa River Bridge is located in downtown Calistoga and in the immediate vicinity of existing buildings. Raising the bridge deck in order to

pass the 100-year event may be infeasible. In order to avoid an increase in potential backwater and upstream flooding, it is advised that the minimum soffit elevation for the new structure should be no lower than that provided by the soffit of the existing structure of approximately 346.9 feet (NGVD29 Datum).

Peak Discharges and High Water Elevations

At the bridge site, the 50-year and 100-year peak discharges are estimated at 10,700 cfs and 12,000 cfs, respectively. The corresponding 50-year and 100-year water surface elevations are estimated at 347.0 feet and 347.6 feet, respectively, based on the NGVD29 Datum. The 100-year discharge and corresponding 100-year water surface elevation are based on FEMA’s September 29, 2010, FIS.

High water elevations have been recorded at the bridge site in 1940 at 2 feet below the bottom of the girder (approximate elevation of 345.0 feet), in 1956 at 1.6 feet below the bottom of the girder (approximate elevation of 345.4 feet), and in 1963 at 2.8 feet below the “clearance line” (approximate elevation of 344.2 feet).

All elevations are based on the NGVD 1929 Datum. Standard Caltrans’ practice is for new bridges to provide adequate freeboard above the Design Flood (50-yr water surface elevation), pass the Base Flood (100-yr water surface elevation), and pass the flood of record. In order to meet these criteria, the minimum soffit elevation should be 349.0 ft. Neither proposed alternatives meet these criteria.

Floodplain Encroachment

For both alternatives, it is assumed that the vertical profile along the bridge will remain the same as the existing bridge. In addition, the soffit of both alternatives will encroach upon the water surface no further than the soffit of the existing structure.

Caltrans' 2011, Summary Floodplain Encroachment Report (SFER) states that the proposed action does not constitute a significant floodplain encroachment as defined in 23 CFR, Section 650.105(q).

Hydrology/Hydraulics Summary Napa River Bridge (Replace) Br. No. 21-0018	
50-yr Discharge	10,700 cfs
50-Yr Water Surface Elevation	347.0 ft
100-Yr Discharge	12,000 cfs
100-yr Water Surface Elevation	347.6 ft
Recommended Minimum Soffit Elevation	346.9 ft
Note: Elevations are based on the NGVD29 Datum	

Scour Summary Napa River Bridge (Replace) Br. No. 21-0018			
Alternative 1 – Two Span Bridge w/ 2' wide Pier Wall			
Scour Type	Scour Depth		
	A1 (South Abutment)	P2	A2 (North Abutment)
Pressure Scour	4 ft	4 ft	4 ft
Local Scour	7 ft	4.8 ft	---
Total Scour	11 ft	8.8 ft	4 ft

Alternative 2 – Single Span Bridge		
Scour Type	Scour Depth	
	A1 (South Abutment)	A2 (North Abutment)
Pressure Scour	4 ft	4 ft
Local Scour	7 ft	---
Total Scour	11 ft	4 ft

Coordination with Water Resources and Floodplain Management Agencies

On January 22, 2014, Caltrans met with the City of Calistoga, Napa County Flood Control and Water Conservation District, Napa County Public Works, Napa County Planning, Building and Environmental Services, and Napa County Resource Conservation District to discuss four projects on the Napa River proposed by various responsible agencies, including this Napa River Bridge Replacement project.

All four projects are located in and around the City of Calistoga. At that time, it was stated that this project is unable to increase the bridge opening to significantly improve the flow capacity due to the proximity of the commercial properties along Route 29. It was also explained that no net increase in the water surface elevation is expected due to this project. Both the City of Calistoga and the Napa County Flood Control and Water Conservation District were agreeable to proceeding with this project.

Figure 7. Flood Insurance Rate Map



Water Quality and Stormwater Runoff

This section describes storm water regulations affecting the project, receiving water bodies listed in Section 303(d) of the Clean Water Act (CWA) and their beneficial uses, existing water quality, project-related storm water discharges and quality, and potential storm water impacts to water quality of receiving waters.

Watershed Receiving Water Bodies

The project is in Napa River Watershed and Upper Napa River Subwatershed. The Upper Napa River Subwatershed extends from the northern headwaters of the Napa River on Mount St. Helena to Howell Mountain in the east and Sulphur Creek in the west. The upper valley is narrow and confined by high ridges. Tributary creeks include: Jericho Canyon, Garrett, Blossom, Cyrus, Nash, Ritchie, Mill, Bell Canyon, Dutch Henry, and Selby. Napa River Watershed is a High Risk Receiving watershed.

This project is within SAN PABLO Hydrologic Unit, Napa River Hydrologic Area and Undefined (Hydrologic Sub-Area 206.50) with a watershed area of approximately 266,735 acres. The direct receiving water body is Napa River. The ultimate receiving water bodies for this project are, Carquinez Strait and San Pablo Bay. They are all in TMDLS & 303(d) Listed waterbodies.

The Napa River, Carquinez Straits and San Pablo Bay are on the Clean Water Act (CWA) Section 303(d) list of Water Quality Limited Segments (SWRCB 2010) for Coliform Bacteria; whereas, the San Francisco Bay (Central) is on the 303(d) list for:

- Chlordane, DDT, Dieldrin, Dioxin Compounds;
- Exotic Species, Furan Compounds, Mercury;
- PCBs (Polychlorinated biphenyls), PCBs (dioxin-like), and
- Selenium as the pollutant of concern.

All the listed pollutants are on the Total Maximum Daily Load (TMDL) required list, except Mercury being addressed by USEPA approved TMDL.

The Napa River is in TMDLs & 303(d) listed Water bodies.

Name	Pollutant	Size	Status
Napa River	Nutrients	65.33 Miles	TMDL required
Napa River	Pathogens	65.33 Miles	Being addressed with USEPA approved TMDL
Napa River	Sedimentation/Siltation	65.33 Miles	TMDL required

Key: Water body on 303(d) list Water body with a TMDL

Water Quality Control Basin Plan

The Water Quality Control Plan (Basin Plan) of the RWQCB designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater (SF Bay RWQCB 2011).

The designated beneficial uses for the Napa River Hydrologic Area include:

- agricultural, cold freshwater habitat, migration of aquatic organisms;
- municipal and domestic supply, navigation, rare and endangered species;
- water contact recreation, non-contact water recreation, and
- fish spawning, reproduction, warm freshwater habitat and wildlife habitat.

Groundwater

Groundwater in the vicinity of the project is shown in Table 1 below:

Table 1. Groundwater in Project Vicinity

Report — Water Features										
Absence of an entry indicates that the data were not estimated. The dash indicates no documented presence.										
Napa County, California										
Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
103—Bale loam, 0 to 2 percent slopes										
Bale	C	Low	January	4.0-6.0	>6.0	—	—	None	Brief	Rare
			February	4.0-6.0	>6.0	—	—	None	Brief	Rare
			March	4.0-6.0	>6.0	—	—	None	Brief	Rare
			April	—	—	—	—	None	Brief	Rare
			May	—	—	—	—	None	Brief	Rare
			June	—	—	—	—	None	Brief	Rare
			July	—	—	—	—	None	Brief	Rare
			August	—	—	—	—	None	Brief	Rare
			September	—	—	—	—	None	Brief	Rare
			October	—	—	—	—	None	Brief	Rare
			November	4.0-6.0	>6.0	—	—	None	Brief	Rare
			December	4.0-6.0	>6.0	—	—	None	Brief	Rare

Risk Assessment

The total disturbed soil area for the project is less than 1 ac (0.8 ac) therefore Risk Assessment Analysis is not required for this project.

Hydromodification

The project will add less than 1 ac of impervious area (about 0.8 ac). Therefore it is not susceptible to hydromodification impacts.

3.5.3 Environmental Consequences

With either alternative, the 100-yr water surface will not overtop the bridge deck. But, as the flows rise above the soffit, a pressure flow condition will develop. Pressure flow results from a vertical constriction to the flow and may lead to pressure scour across the whole channel width underneath the bridge. In order to

minimize pressure scour, the proposed bridge soffit needs to be as high as possible, and encroach no further than the soffit of the existing structure.

1. The Proposed bridge replacement will be constructed within and adjacent to the Napa River, and will create impacts to the Waters of the State or Waters of the U.S. A U.S. Army Corps of Engineers (ACOE) Section 404 permit and a Section 401 Water Quality Certification from the San Francisco Bay RWQCB will be required.
2. The SWRCB identifies waters failing to meet standards for specific pollutants, which 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.
3. Caltrans has performed many studies to monitor and characterize highway storm water runoff throughout the State. Pollutants of Concern in Caltrans runoff found from the “Final Report of the Caltrans BMP Retrofit Pilot Program” were phosphorus, nitrogen, copper, lead, zinc, sediments, general metals (unspecified metals), and litter. Some sources of these pollutants are natural erosion, phosphorus from tree leaves, combustion products from fossil fuels, trash and falling debris from motorists, and the wearing of brake pads.
4. The project will require TMDLs and Section 303(d) compliance for nutrients, pathogens and sedimentation/siltation, due to the receiving bodies, and the Napa River’s failure to meet CWA standards.
5. There are several commercial properties adjacent to all 4 corners of the bridge. There are residential and commercial properties located both upstream and downstream of the bridge. Therefore, impacts to the floodplain which create an increase in the water surface elevation could be significant. However, based on the preliminary Hydrologic Engineering Center River Analysis System (HEC-RAS) results presented by Structure Hydraulics, there is a slight reduction in the water surface elevation in the post construction condition. These results will be finalized by Structure Hydraulics in the design phase.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Plan (FIRM) show that the majority of residential development and properties are not within the boundaries of the base floodplain. For more detail The Technical Information for Location Hydraulic Study and Floodplain Evaluation Summary is available. There are currently no negotiated understandings or agreements with RWQCB pertaining to this project.

3.5.4 Avoidance, Minimization and/or Mitigation Measures

Hydrology and Floodplains

The Napa River Bridge is located in downtown Calistoga and in the immediate vicinity of existing buildings. Raising the bridge deck in order to pass the 100-year event may be unfeasible. In order to avoid an increase in potential backwater and upstream flooding, it is advised that the minimum soffit elevation for the new structure should be no lower than that provided by the soffit of the existing structure of approximately 346.9 feet (NGVD29 Datum).

In order to minimize the effects of hydraulic skew and the resulting increase in pier scour, pile extensions or columns are typically considered. The drawback to pile extensions is that debris can get caught up between the piles, resulting in a blockage that could potentially lead to overtopping of the bridge during a large storm event. With a pier wall, scour will be higher, but any potential debris will pile-up at the nose where it would be easier for Maintenance personnel to remove.

Water Quality

According to Caltrans NPDES permit and the Construction General Permit (CGP), best management practices (BMPs) will be incorporated into Caltrans project to reduce the discharge of pollutants during and after construction to the maximum extent practicable (MEP). Since the project will involve less than one acre of DSA, this project is not subject to the CGP.

In general, BMPs fall into three main categories:

- a) Design Pollution Prevention BMPs: These BMPs are permanent measures to improve storm water quality by reducing erosion, stabilize disturbed soil areas, and maximize vegetated surfaces. Erosion control measures will be provided on all disturbed areas to the extent feasible. These measures can utilize a combination of source and sediment control measures to prevent and minimize erosion from soil disturbed areas. Source controls can utilize erosion control netting in combination with hydroseeding. The biodegradable netting is effective in providing good initial mechanical protection while seed applied during the hydroseeding operation germinates and establishes itself. Other forms of source control such as tacked straw may also be used when applicable. Sediment controls such as biodegradable fiber rolls can be used to retain sediments and to help control runoff from disturbed slope areas. These measures would be investigated during the design phase.

Outlet protection and velocity dissipation devices placed at the downstream end of culverts and channels are also Design Pollution Prevention BMPs that reduce runoff velocity and control erosion and scour.

The need of these devices for this project would also be further investigated during the design phase.

- b) Temporary Construction Site BMPs: These BMPs are applied during construction activities to reduce the pollutants in the storm water discharges throughout

construction. This project will require Construction Site BMPs including, but not limited to:

- Soil Stabilization: scheduling, preservation of existing vegetation, slope protection, slope interrupter devices, and channelized flow;
- Sediment Control: run-on or run-off control, storm drain inlets, sediment or desilting basins, and sediment trap;
- Tracking Controls: stabilized construction entrance and exit, tire or wheel wash, stabilized construction roadway, and street sweeping and vacuuming;
- Wind Erosion Controls: hydraulic mulch, hydroseeding, and temporary covers;
- Non-Storm Water Management: temporary stream crossing, clear water diversion, water conservation practices, dewatering operations, paving and grinding operations, potable water/irrigation, vehicle and equipment operations (fueling, cleaning and maintenance), pile driving operations, concrete curing and finishing, and material and equipment use, structure demolition or removal over water.
- Waste Management and Materials Pollution Control: material delivery and storage, material use, stockpile management, spill prevention and control, solid and concrete waste management, hazardous waste and contaminated soil management, and sanitary or septic and liquid waste management.
- Job site management: will be deployed for this project and involves controlling potential sources of water pollution before these pollutants come in to contact with storm water systems or watercourses.
- Storm water and Watercourse Sampling and Analysis and Reporting.

Given that the anticipated soil disturbance is less than 1 ac (about 0.8 ac); Water Pollution Control Program (WPCP) will be developed during construction. This dynamic document addresses the deployment of various erosion and water pollution control measures that are required commensurate to changing construction activities.

- c) Permanent Treatment BMPs: These BMPs are permanent water quality controls used to remove pollutants from storm water runoff prior to being discharged from Caltrans right-of-way. Typical Treatment BMPs are biofiltration strips or swales with or without soil amendment, infiltration basins, detention basins, traction sand traps, dry weather flow diversions, media filters (Austin and Delaware), gross solids removal devices (GSRDs), multi-chamber treatment trains (MCTT), and wet basins.

The project is required to consider treatment BMPs because of the 401 Certification. The area in the vicinity of project limits is all urban and is a main tourist attraction. All approaches to the bridge limited to sidewalks. There appears to be no opportunity for treatment within current project limits. Therefore consideration should be given to place in treatment at another location in Caltrans R/W that is as close as possible. This alternative location should also discharge runoff to the same receiving water (Napa River). Their location should receive runoff from highway pavement. Treatment of pavement in maintenance

station may also be an option, if highway pavement cannot be treated. It should be noted the water board will require treatment of larger amount of pavement in maintenance station than on the highway up to ratio of about 3 to 1. Caltrans early contacts with SFBRWQCB will determine the type of the anticipated treatment BMPs.

Existing vegetation will be preserved when feasible. However because the project involves bridge replacement, part of the existing vegetation will be impacted. The area will be cleared consists mostly of trees and bushes. The trees and vegetated area that exempt from clearing and grubbing should be protected by means of proper fencing (Please see Section 3.9 Biological Resources for more information regarding trees and vegetation within the project study area).

3.6 GEOLOGY/ SOILS/SEISMIC/TOPOGRAPHY

3.6.1 Regulatory Setting

Topographic and geologic features are protected under the CEQA. This section discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. The Department's Office of Earthquake Engineering is responsible for assessing the seismic hazard for Department projects.

Structures are designed using the Department's Seismic Design Criteria (SDC). The SDC provides the minimum seismic requirements for highway bridges designed in California. A bridge's category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see Caltrans's [Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria](#).

3.6.2 Affected Environment

A Preliminary Foundation Report (PFR) was prepared for the project on March 20, 2013. The proposed project is located on the project site is located within the California Coast Ranges geomorphic province. The site is in the northern portion of the northwest trending Napa Valley, which ranges from sea level by the San Pablo Bay to approximately 360 at the base of Mount Saint Helena, which is the highest point in the area at 4,432 feet.

Topography

The project site is located in Napa County, in the northern section of the Napa Valley, with an elevation of approximately 350 feet above sea level. Napa Valley is drained by the Napa River and its tributaries to the Carquinez Straights then to the San Pablo Bay and on to the San Francisco Bay.

Climate

The climate of the site is considered Mediterranean. Napa County has warm, dry summers and mild, wet winters. Temperatures are highest in July, at 91.7°, and coldest in December, with an average temperature of 35.2°. The average amount of rainfall is approximately 38.51 inches. In the summer, little rainfall occurs. The rainy season begins about October, (1.96 inches) and ends about April (2.22 inches), with the most rain falling in February (5.98 inches). (Data taken from <http://www.idcide.com/weather/ca/calistoga.htm>)

Site Geology

The valley is flanked by the Mayacamas Mountain Range to the west and north. This range was formed by uplift and deformation of the northwest trending right-lateral strike slip younger faults, approximately 12 to 4 million years in age. To the east the Vaca Mountains rise above the valley floor and were formed from the Neogene thrusting deformation of the Mesozoic rocks by the imbricate faulting and overturned

folding (USGS: Geologic Map and Map Database of Eastern Sonoma and Western Napa Counties, California: By R.W. Graymer, et.al. 2008).

At the project location, SR 29 is located on Quaternary deposits which were deposited in the upper and middle to late Holocene. Directly under the bridge is stream channel deposits (late Holocene). These include:

“...loose sand, gravel, and cobbles with minor clay and silt deposited within active, natural stream channels.” To the south of the stream channel deposits are Terrace deposits (Holocene), which are *“...moderately well sorted sand, silt, gravel, and minor clay deposited in point bar and overbank settings,”* and

“...Mostly undissected by later erosion.” To the north Alluvium (Holocene) are composed of *“...sand, silt, and gravel deposited in fan, valley fill, terrace, or basin environment. Mostly undissected by later erosion. Typically mapped in smooth, flat valley bottoms in medium-sized drainages and other areas where geomorphic expression is insufficient to allow differentiation of depositional environment.”* (USGS: Geologic Map and Map Database of Eastern Sonoma and Western Napa Counties, California: By R.W. Graymer, et.al. 2008).

Soils

Surficial soils in the project site are Bale loam, which are formed in floodplains and alluvial fans. This loam parent material is alluvium derived from rhyolite and/or alluvium derived from igneous rock. According to the NRCS, the Bale Loam is in Hydrologic Soil Group C. The NRCS list soil in Group C as:

“...Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.”

Subsurface Conditions

The only available subsurface information is from a 1951 survey. Three one-inch soil tubes were drilled under the widening portions of the bridge. The boring depths vary from 20 to 25 feet. The majority of the subsurface soils encountered were clayey sandy gravel and clayey sand. Rock fragments were encountered in one hole (TH3) at 20 feet depth. Since these borings did not provide sufficient information regarding bedrock elevation and soil/rock mechanical properties, additional field exploration and/or laboratory tests are warranted. Additional testing will be done during the PS&E phase of the project.

Groundwater

Groundwater was not encountered in the 1951 borings. However, it is reasonable to assume the groundwater level at the bridge site is the same as the surface water elevation at Napa River. The actual groundwater elevation will be determined during our field exploration.

Preliminary Foundation Recommendations

Based on our preliminary geotechnical investigations, CIDH piles (with permanent casing) would be used for bridge foundations.

The final design will be made when additional information regarding subsurface conditions becomes available, and when constructability is evaluated. Caltrans will also provide design recommendations for the soil nail reinforcements on the existing abutment walls when additional subsurface soil information becomes available. The Project is located in the San Francisco Bay Area, which is an active seismic region. The controlling fault is the Maacama Fault Zone (South Section) which has a maximum moment magnitude of 7.4

Table 2. Earthquake Fault Data

Fault Name	Distance: Miles	Fault ID:	Fault Type:	Maximum Magnitude (MMax):
Maacama Fault Zone	5.4	92	Strike Slip	7.4

3.6.3 Environmental Consequences

Seismicity

Potential seismic hazards in such an active region are minimal due to the proposed project's location. According to the Alquist-Priolo Earthquake Fault Zone Maps, there are no faults within the limits of the project site, so surface rupture is not an issue.

Groundwater

Groundwater in the area has not been monitored by Caltrans; geotechnical borings will provide measurements at a later date. It is reasonable to assume that the groundwater level at the bridge site is the same as the surface water elevation in the Napa River.¹

Erosion and Slope Stability

Within Caltrans' ROW, the river banks are protected by abutment walls and wing walls which are in good condition. Therefore, erosion and slope stability are not an issue. River bank erosion and failure of a retaining wall has been reported at the northwest side of the bridge, though this failure occurred outside of Caltrans' ROW

Excavation Characteristics

Excavation is planned at the bridge abutments. Based on the 1951 borings, subsurface soils consist of mostly clay-sandy gravel and clay sand. Rock fragments were encountered in one hole (TH3) at a depth of 20 feet. These materials can easily be excavated with conventional equipment.

3.6.4 Avoidance, Minimization and/or Mitigation Measures

In accordance with standard Caltrans requirements, detailed geotechnical studies shall be conducted during the proposed project's future plans, specifications, and estimates (PS&E) phase. BMPs for erosion and sediment control are noted in the Water Quality section of this chapter.

Additional Field Work And Laboratory Testing

Additional field investigation and laboratory testing are necessary to fully identify bedrock elevation and design parameters of foundation materials. The field investigation will include at least two geotechnical borings, one at each abutment location of the new structure. Additional borings may also be needed to identify soil conditions behind the retaining walls. For all borings, Standard Penetration Tests will be performed at 5-foot intervals throughout soil layers. Groundwater depth will be measured. Soil and/or rock samples will be collected for laboratory testing. Continuous rock coring will be performed throughout the rock layer. Rock Quality Designation (RQD) and percentage of recovery will be measured.

Laboratory testing of soil samples may include, but not limited to:

- Index tests (unit weight, water content, gradation, Atterberg limits)
- Consolidation tests
- Strength tests (unconfined compression)
- Corrosion tests

3.7 PALEONTOLOGY

3.7.1 Regulatory Setting

Paleontology is the study of life in past geologic time based on fossil plants and animals. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects. Section 23, Code of Federal Regulations (CFR) 1.9(a) states that the use of federal funds must be in conformity with federal and state law. Under California law, paleontological resources are protected by CEQA.

3.7.2 Affected Environment

A Paleontological Identification Report (PIR) was prepared on March 25, 2013.

The project area is located at the northwestern part of Napa Valley. According to the "Geologic Map of Eastern Sonoma Napa Counties, California" (USGS, 2007 - Fig. 3), the project area is entirely underlain by Terrace deposits of Holocene age (Qht). These overlie Holocene Alluvium (Qha), and at some unknown depth Sonoma Volcanics (Pliocene and late Miocene).

The Terrace deposits are moderately well sorted sand, silt, gravel, and minor clay deposited in point bar and overbank settings, mostly undissected by later erosion (R.W.Graymer and others, 2007). Locally, the Terrace deposits conceal the older formations on which they lie uncomfortably. Some are remnants of former river channel or flood-plain deposits, some may be marine terrace deposits, and some are older alluvial fan deposits. They occur at several altitudes above present sea level and present stream grades. They range in thickness from 0 to 15 feet, except for the older alluvial fan deposits which may be considerably thicker (California Energy Commission, 1986).

The Holocene Alluvium covers the floor of the Napa Valley. The Alluvium consists of sand, silt, and gravel deposited in fan, valley fill, terrace, or basin environment, mostly undissected by later erosion (R.W.Graymer and others, 2007).

The Sonoma Volcanics underlying Valley sediments consist of Rhyolite flows (Tsr) and Volcanic sand and gravel (Tss). The Rhyolite flows includes intercalated rhyolite tuff in places. The Volcanic sand and gravel are crossbedded, coarse-grained volcanic sandstone, and cobble conglomerate with well-rounded to angular andesite and basalt clasts, and includes tuffaceous silt, bedded tuff, clay, and diatomite (R.W.Graymer and others, 2007).

Sonoma Volcanics are Pliocene and late Miocene age. The diatomite has been used to date the formation based on the plant fossils contained within the strata (PG&E Windsor Substation Project, 2010). Abundant plant fossils (37) have been found in Pliocene deposits. Two vertebrate specimens (Mammalia) were found in tuffaceous Agglomerate at Ritchie Creek southeast of the project area. Therefore, these deposits are considered to have a "high potential" to contain significant paleontological resources (Barbra A, et al, 1996, PG&E Windsor Substation Project, 2010 & UC Paleontology Museum Database).

3.7.3 Environmental Consequences

Construction activities can impact paleontologically sensitive geologic units when vehicles or other work equipment impact previously undisturbed sediments by excavating, grading, or crushing bedrock exposed in or underlying a project. This can result in impacts to fossils by destroying them or otherwise altering them in such a way that their scientific value is lost. Because the deposits at the job site are either man made or from the Holocene epoch, and construction methods are not to extend into the Pleistocene deposits, fossil findings are not expected.

Paleontological Sensitivity of Geologic Units

The paleontological sensitivity, per Caltrans guidelines, of each of the geologic units within the project area is described as follows:

Terrace deposits and Holocene deposits: no fossils have been found in these unconsolidated deposits (California Energy Commission, 1986). Additionally, these recent deposits are generally too young geologically speaking to contain significant fossils. Therefore, these deposits have a “low potential” to contain significant paleontological resources.

Construction activities can impact paleontologically sensitive geologic units when vehicles or other work equipment impact previously undisturbed sediments by excavating, grading, or crushing bedrock exposed in or underlying a project. This can result in impacts to fossils by destroying them or otherwise altering them in such a way that their scientific value is lost.

The project includes the following construction activity:

1. Constructing new abutments including drilling and construct CIDH piles.
2. Retaining walls adjacent to the bridge proposed to be replaced
3. Installation of temporary construction access roads onto the banks of Napa River to provide access to the creek bed for construction equipment.
4. A cut-off trench would be provided at both the upstream and downstream cofferdam to reduce seepage into the working area.

3.7.4 Avoidance and/or Minimization Measures

In general, avoidance and minimization measures are not feasible with regard to addressing impacts on paleontological resources. Geologic formations are usually extensive and project design cannot be adjusted sufficiently to effectively avoid or minimize paleontological impacts. As a result, mitigation is the approach generally taken to address these impacts.

The following mitigation measures are recommended and in accordance to Caltrans' Standard Environmental Reference Guidelines (Caltrans, 2007):

- A Paleontological Evaluation Report (PER) should be prepared prior to construction to define actual locations where monitoring may be necessary

based upon the project design. For budgeting, the PER will provide enough information about the level of effort needed.

- Based upon the findings from the PER, a Paleontological Mitigation Plan (PMP) may be recommended to define the specific mitigation measures and methods that will be implemented.
- These recommendations may include:
 - A qualified paleontologist could be present to consult with grading and excavation contractors at pre-grading meetings.
 - The Principal Paleontologist could also have an environmental meeting to train grading and excavation contractors in the identification of fossils.
 - If fossils are discovered, the paleontologist (or paleontological monitor) will be called to recover them. Construction work in these areas may need to be halted or diverted to allow recovery of fossil remains in a timely manner.
 - Fossil remains collected during the monitoring and salvage portion of the mitigation program will be cleaned, stabilized, sorted, and cataloged.
 - Prepared fossils, along with copies of all pertinent field notes, photos, and maps, will then be deposited in a scientific institution with paleontological collections.
 - A final report may be completed that outlines the results of the mitigation program.

Based on our investigation, excavation for the proposed project will not disturb the Sonoma Volcanics units due to their depth beneath the project location. Therefore, the Sonoma Volcanics are not anticipated to be encountered during site construction activities. However, during the geotechnical investigation for the design of the foundation piles, the Sonoma Volcanics may be found at a depth above the design elevation. In this case, it will be necessary to produce Paleontological Evaluation Report (PER) and Paleontological Mitigation Report (PMR) to mitigate the disturbance of potential fossil-bearing strata.

3.8 HAZARDOUS WASTE/MATERIALS

3.8.1 Regulatory Setting

The California Health and Safety Code Section 25501(o) define *hazardous material* as:

...any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Hazardous materials and hazardous wastes are regulated by 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 Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The purpose of CERCLA, often referred to as "Superfund," is to clean up contaminated sites so that public health and welfare are not compromised. RCRA provides "cradle to grave" regulation of hazardous wastes. Other federal laws include:

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

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

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976, and the California Health and Safety Code Section 25501(o)

3.8.2 Affected Environment

Based on the land-use history of the project study area, there is low potential for hazardous materials within the project study area. The bridge structure itself may have lead based paint or asbestos containing materials. There is no known potential NOA of serpentine soils in the project study area. There is low potential for aeri ally deposited lead due to extensive paved areas around the bridge and roadway.

3.8.3 Environmental Consequences

The existing bridge will be demolished. Prior to demolition, a bridge survey will be conducted to identify asbestos or lead based paint. A site investigation will also be conducted to identify contaminants in soul from groundwater. These studies will be conducted during the PS&E phase of the project.

3.8.4 Avoidance, Minimization, and/or Mitigation Measures

Special provisions will be developed based upon the results of the soil, groundwater, and structural investigations for hazardous materials. If required, special provisions will stipulate measures needed to be protective of workers and the public. The debris of the demolished bridge will be off-hauled and disposed of in a class 2 landfill facility.

3.9 BIOLOGICAL ENVIRONMENT

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

Vegetation communities that provide habitat in the Biological Study Area (BSA) include Riparian Evergreen and Deciduous Woodland (Sawyer et al. 2009), with a total of 3.40 acres (ac). Aquatic habitat within the BSA consists of the Napa River. A total of 0.464 ac (1,272 linear feet) of the Napa River is present within the BSA. This section of the Napa River consists of a combination of slow-flowing pools joined by faster-flowing riffle areas, with a rock substrate consisting of cobbles, rocks, cement chunks, and asphalt pieces

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

3.9.1 Regulatory Setting

Wetlands and Other Waters

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. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophilic (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 United States Environmental Protection Agency (U.S. EPA).

The USACE issues two types of 404 permits: General and Standard permits. There are two types of General permits: Regional permits and Nationwide permits. 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 Nationwide Permit may be permitted under one of USACE's Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (U.S. EPA 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 the FHWA and/or Caltrans, 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.

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

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

Plant Species

The USFWS and 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).

This section of the document discusses all the 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 United States Code 16 (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 CEQA, and CA PRC, Sections 2100-21177.

Caltrans Biologists evaluated a combined list of the special-status plant species that occur in the region from the USFWS and California Native Plant Society (CNPS) lists, and California Natural Diversity Database (CNDDB) records.

Animal Species

Many state and federal laws regulate impacts to wildlife. The USFWS, the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NOAA Fisheries Service) and the 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. Species listed or proposed for listing as threatened or endangered are discussed below. All other special-status animal species are discussed here, including CDFW fully protected species and species of special concern, and USFWS or NOAA Fisheries Service 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

- Sections 3503, 3513, and 3800 of the California Fish and Game Code

Threatened and Endangered Species

The primary federal law protecting threatened and endangered species is the 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 FHWA, are required to consult with the USFWS and the NOAA Fisheries Service 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, a Letter of Concurrence and/or documentation of a No Effect finding. 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 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 CDFW is the agency responsible for implementing CESA.

Section 2081 of the 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 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 the CDFW. For species listed under both the FESA and CESA requiring a Biological Opinion under Section 7 of the 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.

Invasive Species

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.

Although there are invasive, non-native plants in the BSA, there is a low potential for the project to cause these species to spread to nearby natural habitats because the area is highly disturbed and developed with no substantial connectivity to native habitats. Therefore, the spread of non-native plants is anticipated to be insubstantial.

3.9.2 Affected Environment

Biological Study Area (BSA)

Project Limits: The Project limits are defined as the areas that will be directly impacted by the proposed Project; also referred to as the Project footprint, this area consists of the Caltrans ROW and the temporary construction easement.

Biological Study Area: The BSA encompasses the Project limits and extends 200 ft upstream and 400 ft downstream beyond the footprint to account for any Project design changes that could shift the footprint boundaries.

The BSA is located in the Mt. St. Helena Flows and Valleys subsection of the Northern California Coast eco-section (Miles and Goudey 1997). The natural plant communities within this subsection are mainly coast live oak (*Quercus agrifolia*) series and, to a lesser extent, Oregon white oak (*Q. garryana*) series at lower elevations and on south-facing slopes at higher elevations; Douglas fir (*Pseudotsuga menziesii*) series in moist canyons and on north-facing slopes; and chamise (*Adenostoma fasciculatum*) series on shallow soils. There are small areas of redwood (*Sequoia sempervirens*) series. Valley oak series and needlegrass (*Nassella* spp.) grasslands prevail in the valleys and on terraces.

Wetlands and Other Waters

No wetlands were observed within the BSA. However, open-water communities in the BSA include the Napa River. The extent of the Ordinary High Water Mark (OHWM) along this reach of the Napa River based on observations of scouring lines and debris lines. The OHWM in the BSA is on average approximately 40 ft wide and 3 ft deep. The portion of the Napa River within the BSA (0.55 ac and 1,282 linear ft) supports a dense mix of riparian evergreen and deciduous woodland canopy which overhangs much of the OHWM creating a shady, cool aquatic environment known as shaded aquatic riverine habitat. This type of riverine habitat is an important component for many native aquatic species including Central California Coast (CCC) steelhead and California Freshwater shrimp (CFS).

Plant Species

As part of the reconnaissance-level assessments, botanical surveys were conducted in the spring and summer of 2013. No rare, federally threatened, or endangered plants were observed during these surveys, nor are any likely to occur within the Project limits.

All plant species listed in Table B (see Appendix B of this document) were eliminated from further consideration in this NES for various reasons, including lack of suitable habitat characteristics, the Project being outside the known elevation or distribution range of the species, lack of known historical or current occurrences in the region, and/or absence during reconnaissance-level surveys.

Natural Communities of Special Concern

Vegetation Communities

One notable natural habitat within the BSA is the riparian evergreen and deciduous woodland habitat along the Napa River corridor. Native trees in this area include white alder, arroyo willow, valley oak, coast live oak, and California black walnut. Reconnaissance-level rare plant surveys were conducted throughout the BSA in spring and summer 2013. Surveys were completed during the appropriate blooming periods or when the target special-status species were most identifiable. No special-status plant species were observed within the BSA.

Field tree surveys were conducted on May 8, May 20, August 1, and October 1, 2013 to identify trees (with a dbh greater than or equal to 4 in.) that may be impacted by the Project. Tree surveys were conducted by following transects, using vegetation layouts to identify tree locations, measuring dbh, recording species, and assessing potential impacts.

Special Status Plant Species

As part of the reconnaissance-level assessments, botanical surveys were conducted in the spring and summer of 2013. No rare, federally threatened, or endangered plants were observed during these surveys, nor are any likely to occur within the Project limits.

All plant species listed in Table B (see Appendix B of this document) were eliminated from further consideration in this NES for various reasons, including lack of suitable habitat characteristics, the Project being outside the known elevation or distribution range of the species, lack of known historical or current occurrences in the region, and/or absence during reconnaissance-level surveys.

Special Status Animal Species

This section addresses the following special-status animal species that have been documented to occur or are considered likely to occur in the BSA:

- California freshwater shrimp
- Sharp-shinned hawk
- California red-legged frog
- Purple martin

- Foothill yellow-legged frog
- Western pond turtle
- CCC DPS steelhead
- Navarro roach
- Pallid bat
- Townsend's big-eared bat
- Migratory birds

A complete list of special-status species for the region is included in Appendix B.

California Freshwater Shrimp (CFS)

The CFS is a small 10-legged crustacean that was listed as endangered by the State of California on October 2, 1980 and by USFWS on October 31, 1988. It inhabits perennially flowing streams with slow-moving water that contain abundant undercut banks and overhanging vegetation.

Limited information is available regarding CFS life history. Reproduction seems to occur once a year, with mating beginning in September. Adult females produce approximately 50 to 120 eggs, and the eggs adhere to the swimming legs on the abdomens of the females through the winter months. Larvae typically emerge in May and early June and grow rapidly during the summer (USFWS 1998).

The species is endemic to Marin, Sonoma and Napa Counties. It is only found in portions of 17 coastal streams within this range, including Lagunitas Creek in Marin County, which is home to the most viable population of the shrimp and is the only site on protected lands. Existing populations of the species are threatened by introduced fish as well as deterioration or loss of habitat from water diversion, impoundments, livestock and dairy activities, agricultural activities and developments, flood control activities, gravel mining, timber harvesting, migration barriers and water pollution. Critical habitat has not been designated for this species (USFWS 1998).

Survey Results: California freshwater shrimp

The section of the Napa River within the BSA provides suitable macro habitat conditions for CFS. It is a low-gradient stream that, in the dry season, has low water velocities, occasional undercut banks, and abundant overhanging vegetation. The glides and pool areas vary in depth from 12 to 30 in., and water within the channel bed pools from bank edge to bank edge (Caltrans 2013; see Appendix C).

In the BSA, CFS have been documented approximately 500 ft downstream of the bridge and upstream to Garnett Creek (CDFW 2014). The last recorded observation noted in the CNDDDB record is from 1990. CFS was not detected during the 2013 surveys.

The channel and associated riparian sections within the BSA provide macro-habitat conditions typical of CFS habitat (e.g., low-gradient stream, low water velocities in the dry season, and abundant overhanging vegetation). However, the section of the Napa River in the BSA lacks the micro-habitat attributes (undercut banks, fine roots and other refugia) necessary to support a resident population unlike the sections the Napa River channel and Garnett Creek upstream of BSA. Conditions in these upstream areas do not appear to have significantly changed since the 1990 surveys

and a cursory assessment indicates a greater extent of undercut banks within these stream reaches. As such, it is likely that CFS is still present and reproduces in these areas upstream of the BSA. While the channel within the BSA lacks essential micro-habitat features, it is likely CFS could be washed into the BSA during higher flows and persist for some period. Low, over-hanging riparian vegetation may provide some cover during higher flows; however, the lack of undercut banks would make any shrimp highly susceptible to predation and being washed further downstream during higher flows.

California Red-Legged Frog (CRLF)

The CRLF was federally listed as a threatened species under the FESA on May 23, 1996 (61 FR 25813). The CRLF is distributed throughout 26 counties in California, but is most abundant in the San Francisco Bay Area. Populations have become isolated in the Sierra Nevada, northern coast, and northern and southern Transverse and Peninsular Ranges (Jennings and Hayes 1994; Stebbins 2003).

CRLFs predominately inhabit permanent water sources such as streams, lakes, marshes, natural and manmade ponds, and ephemeral drainages in valley bottoms and foothills up to 4,900 ft in elevation (Jennings and Hayes 1994; Bulger et al. 2003; Stebbins 2003).

CRLFs breed between November and April in standing or slow-moving water at least 2.5 ft deep with emergent vegetation, such as cattails (*Typha* spp.), tules (*Scirpus* spp.), or overhanging willows (Hayes and Jennings, 1988). Egg masses containing 2,000 to 5,000 eggs are attached to vegetation below the surface and hatch after 6 to 14 days (Jennings and Hayes 1994). Larvae undergo metamorphoses 3½ to 7 months after hatching, and reach sexual maturity at two to three years of age (Jennings and Hayes 1994).

Threats to the species include removal and alteration of habitat due to urbanization, overgrazing of aquatic and riparian habitats, erosion and siltation due to flooding, and predation by nonnative species.

Survey Results: California Red-Legged Frog

No CRLF were observed in the BSA during habitat assessment surveys conducted by LSA on June 27, 2013 and November 19, 2013, or during field visits by Caltrans biologists. Although the section of the Napa River in the Project area provides potentially suitable aquatic breeding and non-breeding habitat (primary constituent elements 1 and 2) and limited associated upland habitat (primary constituent element 3) for California red-legged frogs the potential breeding habitat is marginal due to the lack of attachment sites for eggs and in-water vegetation to provide cover for CRLF (LSA, personal communication 2014). The pooled areas are deep enough to support CRLF eggs and larvae to maturity, and the banks and pools provide the habitats and retreats necessary to support adult frogs. Dispersal habitat (primary constituent element 4) is limited to movement upstream and downstream along the Napa River riparian corridor as a result of urban development.

There are no CNDDDB or other apparent records of CRLF within 5 miles of the Project site. The Project is also outside of critical habitat (USFWS 2010) and any

designated CRLF recovery units (USFWS 2002). The closest designated CRLF critical habitat is NAPA-1. The NAPA-1 designated CRLF critical habitat is approximately 10 mi east of the BSA, where SR 121 meets SR 128.

The closest verified records of red-legged frogs in Napa County are from the Capell Valley (Pope Creek/Lake Berryessa watershed) region, approximately 10 mi to the east of the BSA, and the American Canyon area in southern Napa County approximately 30 miles south of the BSA (CDFW 2014). There is also a reported recent occurrence in the hills west of Yountville in Napa County (S. Gilmore, CDFW, pers. com. 2013), although specific details and location information are lacking.

In summary, because no CRLF have been observed during Project amphibian and other biology surveys of the Action Area, within the Napa River in the last century, or within 10 mi of the Action Area, and due to the presence of access-limiting urban development surrounding the riparian habitat, no CRLF are expected in the Action Area. In addition, the lack of emergent vegetation in the Project area makes it unlikely that any pools or runs would provide suitable habitat for CRLF reproduction.

Foothill yellow-legged frog

The FYLF is a state special species of concern that occurs throughout the Coast Ranges of California from the Oregon border south to the Transverse Range in Los Angeles County, in most of northern California west of the Cascade crest, and along the western flank of the Sierra south to Kern County (Zeiner et al. 1990). FYLF are found in a variety of habitat types including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow. Its elevation range extends from sea level to 6,000 ft in the Sierra (Stebbins 1985).

Adult FYLF are generally found on partially shaded, pebble or cobble river bars, along both riffles and pools. This species is also occasionally found in other riparian habitats, including moderately vegetated backwaters, isolated pools (Hayes and Jennings 1988), and slow-moving rivers with muddy substrate. Adults often bask on exposed rock surfaces near streams. When disturbed, they dive into the water and take refuge under submerged rocks or sediments (Zeiner et al. 1990). FYLF usually breed in shallow, slow-flowing water with at least some pebble and cobble substrate. Breeding and egg-laying usually begins between mid-March and May, after spring flooding conditions. Eggs take between 5 and 30 days or more to hatch and timing is thought to be dependent on temperature. The tadpoles require 15 weeks for metamorphosis, which normally occurs between July and September. FYLF rarely travel far from permanent water, and normal home ranges are probably less than 33 ft in the longest dimension (Zeiner et al. 1990). No critical habitat is designated for this species.

Survey Results: Foothill yellow-legged frog

The aquatic section of the BSA provides the riffle/pool conditions typical of those that support populations of FYLF. The density of the riparian tree canopy produces 90 to 100 percent shade, which slightly exceeds favored conditions. However, more open river sections are located nearby.

The CNDDDB lists 22 occurrence records for FYLF in Napa County with numerous additional records for northeastern Sonoma County (CDFW 2014). No records are listed within the main Napa River near the BSA. The closest reports are of individuals observed in the James Creek watershed 6.5 to 7 mi to the north of Calistoga; in Franz Creek, approximately 5 mi west of the Napa River and Project Site; and in several tributary streams to the Napa River in the hills west of Saint Helena, approximately 6 mi southeast of the BSA. Neither James Creek nor Franz Creek feeds into the Napa River system. James Creek is a tributary to Pope Creek and Lake Berryessa. Franz Creek is a tributary to Macama Creek and the Russian River. Records from the Napa River system are from the upper portions of tributaries more than 8 mi from Calistoga.

Western pond turtle

The western pond turtle is a California species of special concern. Western pond turtles range throughout the state of California, from southern coastal California and the Central Valley, east to the Cascade Range and Sierra Nevada. The two subspecies, northwestern and southwestern, are believed to integrate over a broad range in the Central Valley (Jennings and Hayes 1994). No critical habitat is designated for this species.

This species occurs in a variety of permanent and intermittent aquatic habitats such as ponds, marshes, rivers, streams, and ephemeral pools. Pond turtles require suitable basking and haul-out sites, such as emergent rocks or floating logs, which they use to regulate their temperature throughout the day (Holland 1994). In addition to appropriate aquatic habitat, these turtles require an upland oviposition site in the vicinity of the aquatic habitat, often within 656 ft. Nests are typically created in grassy, open fields with soils that are high in clay or silt fraction. Egg-laying usually occurs between March and August.

A recent study has demonstrated that this species may spend the winter in an inactive state, on land or in the water, and in other cases may remain active and in the water throughout the year (Jennings and Hayes 1994). Although the turtles may be active year-round along the coast, at interior locations such as the Central Valley, pond turtles are more likely to be active between April and October. Western pond turtles have been documented hibernating up to 1,150 ft from a watercourse, immediately adjacent to a watercourse (Jennings and Hayes 1994), and underwater in mud. Upland hibernacula may include any type of crack, hole, or object that a turtle seeking cover might squeeze into or burrow underneath.

Survey Results: Western pond turtle

According to a CNDDDB report from May 2006, a juvenile western pond turtle was observed at the La Pradera drainage ditch less than 0.5 mi upstream of the BSA. The ditch is tributary to the Napa River. No western pond turtles were observed during the reconnaissance-level wildlife and habitat assessments during 2013; however, western pond turtles are known from the area and are likely to inhabit the BSA. The steep shaded banks of the BSA are unlikely to provide breeding habitat for the western pond turtle.

California Central Coast Distinct Population Segment Steelhead

The CCC steelhead DPS was listed as federally threatened on January 5, 2006 for an effective date of February 6, 2006 (Fed. Reg.: 71, No. 3). This DPS includes all naturally spawned anadromous populations below natural and constructed impassable barriers in California streams from the Russian River (inclusive) to Aptos Creek (inclusive), and the drainages of San Francisco Bay, San Pablo Bay, and Suisun Bay eastward to Chipps Island (at the confluence of the Sacramento River with the San Joaquin River). The most recent status review concluded that Napa River CCC steelhead remain “likely to become endangered in the foreseeable future” (NMFS 2005).

The current number of steelhead native to the Napa River is unknown. Habitat requirements for steelhead include cool, clean, flowing water with sufficient dissolved oxygen and minimal turbidity for successful incubation and rearing. Steelhead juveniles require cool stream water temperatures year-round because the species does not emigrate from its natal stream until its second year of life. Adult CCC steelhead typically enter fresh water in December through March, with a peak in January through February (Moyle 2002). Adult spawning generally occurs from December through April, depending on the local population. Most steelhead reside in the ocean for 1 to 3 years before returning to spawn (Moyle 2002).

Survey Results: California Central Coast Distinct Population Segment Steelhead

The fish habitat and passage assessment for this species conducted in June 2013 concluded that steelhead likely inhabit this portion of the Napa River (Appendix C). The habitat within the BSA provides migration and holding habitat for adult steelhead. It also provides migration and rearing habitat for juvenile steelhead. Steelhead spawning and incubation habitat does not exist due to the lack of suitable substrate materials. The BSA is likely suitable for steelhead during late fall through early spring (mid-October through mid-April) when stream flows and water temperature conditions allow occupation by this species.

From known life history characteristics, steelhead are inferred to occupy the Napa River at least on a seasonal basis in the BSA (CDFW 2014). Due to seasonal conditions, including low stream flow and high water temperatures, during the proposed Project in-channel work window (June 1 through mid-October), adult steelhead are unlikely to be present in the BSA.

Critical habitat for CCC steelhead

Critical habitat for CCC steelhead was designated on September 2, 2005. This designation became effective on January 2, 2006. The counties included in the designated critical habitat include Napa County. Within Napa County, critical habitat includes the San Pablo Hydrologic Unit and Napa River Hydrologic Sub-Area (70 FR 52488). The lateral extent of designated critical habitat is defined as the width of the stream channel defined by the OHWM as designated by the U.S. Army Corps of Engineers (USACE) (70 FR 52488). The designated critical habitat for CCC steelhead in Napa River includes the Project BSA. The following primary constituent

elements of critical habitat for CCC steelhead that are located within the Project-affected area are:

- Freshwater rearing sites
- Freshwater migration corridors

No Essential Fish Habitat has been designated for steelhead.

Navarro roach

The Navarro roach (*Lavinia symmetricus navarroensis*) is a state species of special concern. Adult roach are usually less than 4 in. long with small scales and a distinctive chisel lip. The short dorsal fin has 7-10 rays and the anal fin 6-9 rays. The Navarro roach is a habitat generalist known from the San Francisco and San Pablo watersheds in warm to cool aerated streams feeding on filamentous algae, crustaceans, and aquatic insects. However, recently it has been found only in the Russian and Navarro River basins (CDFW 1995). No critical habitat is designated for this species.

The fish passage survey conducted for this Project did not include the Navarro roach; however, based on the stream characteristics described during the habitat assessment, conditions in the BSA are suitable for Navarro roach. No known records have been reported from the Napa River Watershed. The closest known location is from Mark West Creek, Sonoma Creek Watershed, approximately 7 mi west of the BSA. From known life history characteristics and CNDDDB records, the Navarro roach has a low potential to occupy the Napa River (CDFW 1995; CDFW 2014).

Sharp-shinned hawk

The sharp-shinned hawk (*Accipiter striatus*) is classified as a state species of special concern by CDFW. Males are 9.5 to 12 in. long, have a wingspan of 20 to 23 in., and weigh from 0.20 to 0.25 lbs. Females average distinctly larger at a length of 11.5 to 14.5 in., a wingspan of 23 to 27 in., and a weight of 0.33 to 0.50 lbs. Adults have short broad wings and a long square-ended tail banded in blackish and grey (often narrowly tipped white).

The sharp-shinned hawk is known to breed from Canada to Central America. Individuals from most of the Canadian and northern U.S. range migrate in winter, some as far south as Panama. The sharp-shinned hawk is known to nest and forage in Jeffrey pine, ponderosa pine, mixed conifer, black oak, and riparian deciduous woodlands throughout California. Foraging habitat also consists of shrublands and grasslands near their breeding grounds.

Reconnaissance-level surveys in 2013 concluded that marginal nesting and foraging habitat is present along the Napa River riparian corridor in the BSA for sensitive raptors such as the sharp-shinned hawk due to the urban surroundings. While the river corridor provides suitable potential nesting and perch sites, the surrounding developed lands do not offer ample opportunities for foraging. Moreover, most raptors species are sensitive to human disturbances and therefore inhabit more

remote streamside areas with open fields or forests in the adjacent lands for foraging.

The only known reported occurrence from the Project region is from 1993 and is located approximately 1 mi southwest of the BSA along the Fiege Reservoir. Remnant stick nests were not observed in the BSA during the 2013 surveys. In addition, no raptor species were seen foraging in the area. With one known occurrence and marginal habitat characteristics in the BSA, there is a low potential for the sharp-shinned hawk to occur in the Project limits during construction.

Purple martin

The purple martin is classified as a state species of special concern by CDFW. Adults are 7.5 in. long and weigh up to 1.9 ounces; they are broad-chested with stout, slightly hooked bills, short, forked tails, and long, tapered wings. Adult males are iridescent dark blue-purple overall with brown-black wings and tail. Females and juveniles are duller, with variable amounts of gray on the head and chest and a whitish lower belly.

This aerial insectivore is known to breed along the Pacific coast of the United States and Canada, and in the Rocky Mountains. Purple martins spend the non-breeding season in Brazil, then migrate to North America to nest. East of the Rockies they are totally dependent on human-supplied housing. West of the Rockies and in the deserts, they largely nest in their ancestral ways in abandoned woodpecker nest cavities or old tree snags in woodlands and forests.

No individuals of the species were noted during the surveys of 2013. Reconnaissance-level surveys in 2013 concluded that suitable nesting and foraging habitat for the purple martin is present along the Napa River riparian corridor in the BSA. While the river corridor provides suitable potential nesting and foraging grounds, there is only one known reported occurrence in the Project region from 1988 located approximately 6 mi north of the BSA within the Robert Louis Stevenson Memorial State Park lands. With one known occurrence and suitable habitat characteristics in the BSA, there is a moderate potential for the purple martin to occur during construction.

Pallid bat

The pallid bat is classified as a state species of special concern by CDFW. Adults range from 2.5 to 3.5 in. long from head to tail. The tail can be 1.5 to 2.0 in. alone. Forearm length is 1.5 to 2.5 in. and body weight ranges from 0.5 to 1.0 ounce. Their fur has a woolly feel with a cream-yellow to light brown color on the dorsum and very pale to white color on the venter. This species has a U-shaped ridge on the top of the muzzle with the nostrils located underneath the ridge on the front of its muzzle (Nowak 1999).

Pallid bats range from southern British Columbia through Montana to central Mexico. They occur from the Okanagan Valley in British Columbia, south through eastern Washington, Oregon, and California to Baja California Sur, Sonora, Sinaloa, Nayarit, Jalisco, Queretaro, and Nuevo Leon in Mexico. They are found as far east as

western Texas, Oklahoma, southern Kansas, southern Wyoming, and southern Idaho. There is a disjunct population on the island of Cuba. (Nowak 1999; Verts and Carraway 1998).

Pallid bats are also called desert bats because they are mostly found in desert habitats. They roost in a variety of places but favor rocky outcrops. They also occur in oak and pine forested areas and open farmland. Roosting sites are variable, depending on what is available. They can be found roosting in caves, rock crevices, mines, hollow trees, and buildings. Breeding in California typically occurs during the month of August until September. Males are present in nursery colonies as well as in separate single-sex groups.

Reconnaissance-level surveys in 2013 resulted in observations of unidentified bat individuals (>10) and significant staining from bat droppings under the bridge, and concluded that night and day roosting habitat is present along the Napa River riparian corridor in the BSA for sensitive bats such as the pallid bat due to the urban surroundings. While the river corridor provides suitable potential nesting and roost sites, the surrounding developed lands do not offer ample opportunities for foraging with minimal human disturbances. Because this species is sensitive to human disturbances it is more likely to inhabit remote streamside areas with open fields or forests in the adjacent lands.

Two historical occurrences from the Project region are from 1945 and 1948, located approximately 0.5 mi north and 3 mi southeast of the BSA, respectively. However, even with no current known locations within the Project region, there is a moderate potential for the pallid bat to occur within the BSA during construction.

Townsend's big-eared bat

The Townsend's big-eared bat is classified as a state species of special concern by CDFW as well as a candidate for listing as threatened under CESA. They are medium-sized bats with broad wings. They have two large, fleshy glands on either side of the muzzle. The snout is short with elongated nostril slits. Coloration varies from population to population, although all fur colors tend to be some hue of brown or gray. Hairs are darker at the base than they are at the tips. The dorsum can be anywhere from pale cinnamon brown to blackish brown to slate gray. The ventral side tends to be buff to pale brown. Ears are large (generally more than 1 in. in length) and connected by a low band across the forehead (Nowak 1999).

Townsend's big-eared bats range in western North America from southern Canada to southern Mexico. They have significant populations in all Rocky Mountain states (Arizona, Colorado, Utah, Wyoming, Idaho, and Montana) as well as Texas, South Dakota, Kansas, northwest Arkansas, and southern Missouri, and west through California, Oregon, and Washington (Nowak 1999; Verts and Carraway 1998).

Townsend's big-eared bats roost in variety of habitats. Most commonly they are found in mesic sites, caves, trees, and man-made structures such as abandoned buildings in higher elevations (more than 500 ft). Sensitive to human disturbances, they typically are not common in urban settings. Breeding in California generally

takes place between November and February with offspring rearing continuing into spring and summer (Verts and Carraway 1998).

Reconnaissance-level surveys in 2013 resulted in observations of unidentified bat individuals (>10), significant staining from bat droppings under the bridge, and concluded that day and night roosting habitat is present along the Napa River riparian corridor in the BSA for sensitive bats such as the Townsend's big-eared bat due to the urban surroundings. While the river corridor provides suitable potential nesting and roost sites, the surrounding developed lands do not offer ample opportunities for foraging without human disturbances. Because this species is sensitive to human disturbances it is more likely to inhabit remote streamside areas with open fields or forests in the adjacent lands.

Two known occurrences from the Project region are from 1987 and 1997 located approximately 7 mi east of the BSA. However, due to the urban surroundings, there is only a moderate potential for the Townsend's big-eared bat to roost in the BSA during construction.

Migratory Birds

Migratory birds may nest on the ground, on structures, or in trees, shrubs, or other vegetation within the BSA during the breeding season (February 16-August 31).

Common migratory bird species found in the riparian evergreen and deciduous woodland community within the BSA include red-shouldered hawk (*Buteo lineatus*), hairy woodpecker (*Picoides villosus*), western scrub jay (*Aphelocoma californica*), Steller's jay (*Cyanocitta stelleri*), California towhee (*Melospiza crissalis*), chestnut-backed chickadee (*Poecile rufescens*), and northern rough-winged swallow (*Stelgidopteryx serripennis*). The Project area contains trees that could serve as potential nesting habitat for species protected by the Migratory Bird Treaty Act (MBTA).

3.9.3 Environmental Consequences

Wetlands and Other Waters

The bridge demolition and construction work will potentially affect aquatic resources located within the Napa River channel bed and bank areas, including areas in which the temporary water diversion system will be constructed and areas where the existing bridge abutments will be demolished.

As described, a typical temporary water diversion system consisting of up- and downstream cofferdams will be in place during the entire in-channel construction period (June 1 through October 15). The cofferdams will be constructed across the river with clean washed gravel bags wrapped in impermeable plastic sheeting. A cut-off trench will be provided at both the up- and downstream cofferdams to reduce seepage into the working area. The diversion channel will consist of parallel Type K rails lined with impermeable plastic sheet. The cofferdams will be assembled and removed in each of the two construction seasons. The actual plan for the temporary water diversion system would be presented by the contractor prior to start of construction for agency review and approval.

During construction, both temporary and permanent erosion controls and scouring protection measures will be placed on the river bed underneath the bridge. Impacts will be negated by the removal of a bridge support section that currently stands in the middle of the Napa River, resulting in a no-net loss to waters of the U.S., an increase in potential aquatic habitat, and improved fish passage.

While the proposed Project and four other anticipated projects along the Napa River may modify water flow during their constructive activities, no long-term adverse impacts are anticipated to wetlands or waters. The proposed Project will improve overall water conditions by eliminating the middle pier, which is an obstacle to water flow, and which will reduce scour of stream banks currently occurring immediately downstream of the bridge. This may have an overall cumulative beneficial impact when combined with other improvements to water flow that would occur as a result of the Calistoga Pedestrian Bridge/Fish Barrier Removal Project and Greenwood Avenue Culvert Project along the Napa River.

Natural Communities of Special Concern

Some vegetation will be trimmed or removed to accommodate the construction activities. Approximately 0.262 ac of riparian habitat and 0.011 ac of street landscaping will be temporarily impacted due to construction activities. Up to 20 trees along the riparian woodland corridor and five ornamental street trees along Lincoln Avenue will be cut back to accommodate construction activities. Additionally, some trees within the Project limits may need to be trimmed to accommodate construction equipment. Tree replacement is described below.

The twenty-five affected trees include 18 native trees in the riparian corridor and 7 non-native trees, 5 of which are ornamental trees located along Lincoln Avenue and are not within the riparian corridor. Two of the trees within the riparian corridor are tree of heaven, an invasive species, and will be removed completely to improve the quality of the habitat. Table 3 below lists the trees that would be removed during construction.

Table 3. Trees to be Removed

Number	Diameter at Breast Height (dbh) (in)	Species	Native
1	4	Willow	Yes
2	4	White alder	Yes
3	4	Willow	Yes
4	7	Willow	Yes
5	N/A	Tree of heaven	No
6	25	Tree of heaven	No
7	16	White alder	Yes
8	14	Arroyo willow	Yes
9	20	Mulberry	No
10	4	Arroyo willow	Yes
11	12	Arroyo willow	Yes
12	10	Arroyo willow	Yes
13	9	Arroyo willow	Yes
14	10	Valley oak	Yes
15	46	Cottonwood	Yes
16	13	Cottonwood	Yes
17	N/A	Oregon ash	Yes
18	20	White alder	Yes
19	6	Arroyo willow	Yes
20	25	White alder	Yes
21	N/A	Oleander	No
22	N/A	Ornamental	No
23	N/A	Ornamental	No
24	N/A	Ornamental	No
25	N/A	Ornamental	No

Note:
N/A = not available

Special Status Animal Species

California Freshwater Shrimp (CFS)

Direct impacts to aquatic CFS habitat are anticipated within the Project footprint only during the diversion of water from work areas. To ensure safe removal and relocation of CFS should they be present in residual pool areas during dewatering, it may be necessary to capture and handle CFS as described in the preceding section. Handling shrimp during capture and relocation would constitute “harassment” under Section 7 of the FESA, resulting in “take” of the species. However, implementation of a NMFS/CDFW-approved water diversion plan and fish capture/relocation plan (that will also be applicable to relocation of aquatic crustaceans) will result in minimizing mortality and injury to CFS.

Impacts to CFS habitat will result from construction of the new bridge, as shown in Table 4. Approximately 0.167 ac of potential CFS aquatic habitat will be temporarily lost during dewatering activities. Approximately 0.262 ac of adjacent riparian habitat will be affected during construction. A portion of the tree canopy will be trimmed and up to 20 trees will need to be removed from the riparian corridor to safely accommodate construction. This could result in a minor increase in stream temperature in the Project limits due to greater sunlight exposure, but is not expected to decrease suitability to CFS which are known to tolerate a broad range of stream temperatures, including warmer temperatures of 73°F in natural conditions and 80°F under controlled conditions (USFWS 1998). Impacts will be negated by the removal of the existing bridge support section that currently stands in the middle of the Napa River, resulting in a no-net loss to aquatic habitat for CFS and providing a more natural characteristic to the stream. The proposed Project is expected to have beneficial effects to the riparian corridor in the long term by removing invasive tree species and replacing them with native trees.

Table 4. Summary of Temporary and Permanent Impacts to California Freshwater Shrimp Habitat

Habitat Type	Area (sq. ft.)	Area (ac)
Aquatic		
Permanent	-	-
Temporary	7,275	0.167
Riparian Woodland		
Permanent	-	-
Temporary	11,413	0.262

California Red-Legged Frog (CRLF)

No CRLF were observed in the BSA during habitat assessment surveys conducted by LSA on June 27, 2013 and November 19, 2013 (Caltrans 2014; see Appendix D) or during field visits by Caltrans biologists. Although the section of the Napa River in the Project area provides potentially suitable aquatic breeding and non-breeding habitat (primary constituent elements 1 and 2) and limited associated upland habitat (primary constituent element 3) for California red-legged frogs, the potential breeding habitat is marginal due to the lack of attachment sites for eggs and in-water vegetation to provide cover for CRLF (LSA, personal communication 2014). The pooled areas are deep enough to support CRLF eggs and larvae to maturity, and the banks and pools provide the habitats and retreats necessary to support adult frogs. Dispersal habitat (primary constituent element 4) is limited to movement upstream and downstream along the Napa River riparian corridor as a result of urban development.

There are no CNDDDB or other apparent records of CRLF within 5 miles of the Project site. The Project is also outside of critical habitat (USFWS 2010) and any designated CRLF recovery units (USFWS 2002). The closest designated CRLF critical habitat is NAPA-1. The NAPA-1 designated CRLF critical habitat is approximately 10 mi east of the BSA, where SR 121 meets SR 128.

No designated or proposed critical habitat for the CRLF will be impacted by this Project.

1. By implementing Caltrans general avoidance and minimization measures, and due to the lack of CRLF sightings within 10 mi of the Project area, Caltrans does not anticipate measurable adverse direct or indirect impacts to CRLF.
2. The removal of the existing middle bridge pier from the river channel is considered a beneficial effect and will generally enhance the ecological function of the river in this location by improving water flow and reducing erosion of the river banks.
3. Approximately 0.262 ac of riparian woodland habitat would be temporarily impacted during construction activities. The trimming and possible removal of a small number of riparian trees and shrubs may result in the temporary reduction in shading.
4. Based on the limited size of the aquatic habitat directly affected by these activities (0.167 ac in total, a portion of which would remain shaded by the bridge), the potential change in light and water temperature would be slight. The canopy would be reestablished as tree branches grow in to fill in the space and stump sprouting and replanting efforts reclaim the area.

Foothill yellow-legged frog

Adverse impacts to FYLF are expected to be minor and temporary, the same as those described for CRLF. The Project will ultimately enhance water conditions

within the Project limits which will benefit species potentially using this section of the river, including FYLF, if they were to occur.

Western pond Turtle

Potential impacts to western pond turtles may include loss of individuals during grading and heavy equipment movement, as well as temporary disturbance to dispersal habitat. The Project will result in the temporary loss of approximately 0.167 ac of potential western pond turtle aquatic habitat from dewatering activities. Construction activity will also temporarily increase light, noise, vibration, and visual disturbances within the Project footprint. While there are potential impacts associated with the Project, these impacts will be reduced through the avoidance and mitigation measures described in this section.

Potential impacts will be negated by the removal of the existing bridge support section that currently stands in the middle of the Napa River, resulting in an overall net benefit to potential aquatic habitat for western pond turtle.

California Central Coast Distinct Population Segment Steelhead

Impacts to CFS habitat will result from construction of the new bridge, as shown in Table 5 below. Direct impacts are anticipated within the Project footprint only during the dewatering of work areas. To ensure safe removal and relocation of fish within the wetted areas, it will be necessary to capture and handle steelhead should they be present in residual pool areas during dewatering. Handling steelhead during capture and relocation would constitute “harassment” under Section 7 of the FESA, resulting in “take” of the species. However, implementation of a NMFS/CDFW-approved water diversion plan and fish capture/relocation plan will result in minimizing mortality and injury to steelhead.

The Project will result in the temporary loss of approximately 0.167 ac of potential steelhead migration habitat from dewatering activities. In addition, approximately 0.262 ac of riparian woodland habitat will be temporarily affected by construction activity. The trimming and removal of up to 20 riparian trees and shrubs will result in the reduction of shade and a potential increase in stream temperatures within the Project footprint, as well as a potential decrease in detritus associated with the reduced canopy cover. Based on the limited size of the aquatic habitat directly affected by these activities (0.167 ac in total, a portion of which will remain shaded by the bridge), the change in light and temperature will be slight and is not expected to affect habitat suitability for steelhead.

Impacts will be negated by the removal of the existing bridge support section that currently stands in the middle of the Napa River, resulting in a no-net loss to potential migration habitat for CCC steelhead.

Table 5. Summary of Temporary and Permanent Impacts to Steelhead Habitat

Habitat Type	Area (sq. ft.)	Area (ac)
Aquatic		
Permanent	-	-
Temporary	7,275	0.167
Riparian Woodland		
Permanent	-	-
Temporary	11,413	0.262

Dewatering during construction will have a temporary effect on CCC steelhead critical habitat by the short-term alteration of the streambed and channel. However, the removal of the middle bridge pier and subsequent improvement to water flow and reduction in streambank scour will result in long-term rearing habitat enhancements and will offset the short-term losses of steelhead critical habitat.

Navarro roach

Direct and indirect impacts are not anticipated within the Project footprint as there is a low potential for Navarro roach to occur in the BSA. To ensure safe removal and relocation of fish should they be present in residual pool areas during dewatering, fish handling during capture and relocation would be implemented by NMFS/CDFW-approved fisheries biologists and would follow the approved water diversion plan and fish capture/relocation plan. This will result in minimizing mortality and injury to all fish present. Should the Navarro roach be observed in the Project limits during the dewatering process, Caltrans would inform CDFW and fill out a CNDDDB report.

Sharp-shinned hawk

Impacts to potential nesting habitat will result from construction access in the riparian corridor. Approximately 0.262 ac of riparian woodland, which includes suitable nesting habitat will be temporarily impacted by construction and up to 20 trees within the riparian corridor and five ornamental street trees will be cut back or removed. These impacts are considered minor given the dense woodland habitat present within the Project Footprint and BSA.

Purple martin

The Project would have minor temporary impacts on purple martin habitat similar to that described for sharp-shinned hawk.

Pallid bat

Impacts to potential roosting habitat will result from construction access in the riparian corridor. Approximately 0.262 ac of riparian woodland, a portion of which contains suitable roosting habitat, will be temporarily impacted by construction activities. These impacts will be temporary and include noise, lighting, tree trimming, and removal of the bridge itself. Additionally up to 20 trees will be removed from the riparian corridor, reducing suitable roosting habitat for the species.

Townsend's big-eared bat

Potential impacts to Townsend's big-eared bat will be similar to those described for the pallid bat.

Migratory Birds

Minor temporary impacts to potential nesting habitat will result from construction access in the riparian corridor. Approximately 0.262 ac of riparian woodland suitable for nesting will be temporarily impacted by construction activities and 20 trees will be cut back or removed from the riparian corridor.

Impacts to migratory birds can be avoided or minimized by implementing the measures previously described, and an onsite riparian revegetation plan will be implemented to restore the riparian woodland. Therefore, no additional compensatory mitigation for migratory birds is proposed.

3.9.4 Avoidance, Minimization, and/or Mitigation Measures

Wetlands and Other Waters

With the preferred alternative, the amount of fill into waters of the United States will be reduced compared to present conditions, the aquatic habitat area will increase, and the integrity of the Napa River will be restored in the Project footprint. The proposed Project will not impact wetlands.

Temporary impacts to waters of the United States will be minimized to the greatest extent possible through implementation of Caltrans' BMPs, working only during June 1 through October 15, and incorporating applicable water quality measures during the construction period. The proposed Project will increase aquatic habitat within Napa River if the existing bridge is removed and a one-span bridge is installed per the preferred alternative. No additional mitigation is proposed or anticipated.

Natural Communities of Special Concern

The 25 trees to be removed will be mitigated by planting replacement trees at a ratio of 3:1 for native riparian trees with a dbh of 4 inches or greater. Non-native trees will be compensated at a ratio of 1:1. Trees will be planted onsite in the Project area to the maximum extent possible after the completion of construction. Potential offsite planting areas are being identified within the Napa Valley. Tree and shrub planting will occur as part of a separate landscaping project to follow the bridge/roadway construction Project.

Caltrans proposes a 3-year plant establishment period with a minimum 65 percent survival rate at the end of the third year. All disturbed areas will be re-vegetated with appropriate native, non-invasive species or non-persistent hybrids that will serve to stabilize site conditions.

No compensatory mitigation will be needed for tree trimming.

Special Status Animal Species

California Freshwater Shrimp (CFS)

Caltrans will implement measures described in Section 4.1 to avoid and minimize adverse environmental effects during construction including seasonal avoidance, dry working conditions, a temporary water diversion for aquatic species passage, pre-construction surveys, species relocation, biological monitoring, SWPPP measures, and post-construction site restoration. No riprap will be installed within the river or along the banks. In-channel work will be restricted to a seasonal window from June 1 to October 15. Habitat quality will be improved through the implementation of a single-span bridge design.

In addition, a species relocation plan will be implemented if CFS is found during pre-construction surveys. If CFS is encountered in the immediate work area the following procedures will be followed:

1. CFS would be captured by hand-held nets (e.g., heavy-duty aquatic dip nets [12–in. D-frame net] or small minnow dip nets) and relocated out of the work area in the net or placed in buckets containing stream water and then moved directly to the nearest suitable habitat in the same branch of the River. Suitable habitat would be identified prior to capturing CFS to minimize holding time. Suitable habitat is defined as river sections that would remain wet over the summer and where banks are structurally diverse with undercut banks, exposed fine root systems, overhanging woody debris, or overhanging vegetation. No CFS would be placed in buckets containing other aquatic species.
2. CFS will be relocated downstream a minimum of 100 ft from the site to an area that has appropriate overhanging vegetation and undercut banks. The CFS will be released within suitable habitat acceptable to the USFWS and CDFW, which will be notified. If suitable habitat cannot be identified, the USFWS and CDFW will be contacted to determine an acceptable alternative. Transporting CFS to a location other than the location described herein will require written authorization of the USFWS and CDFW.
3. Once the USFWS- and CDFW-approved biologist has determined that all shrimp have been effectively relocated, barrier seines or exclusion fencing would be installed to prevent shrimp from moving back in, as appropriate.
4. The USFWS/CDFW-approved biologist would report the number of captures, releases, injuries, and mortalities to the USFWS/CDFW within 30 days of Project completion.

California Red-Legged Frog (CRLF)

Caltrans will implement reasonable and prudent measures to minimize and avoid take of CRLF. Caltrans will implement the general AMMs listed in Section 4.1, as well as the following specific measures for CRLF:

1. **Proper Use of Erosion Control Devices.** To prevent CRLF from becoming entangled or trapped in erosion control materials, plastic monofilament netting (i.e., erosion control matting) or similar material will not be used for this Project.

Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.

2. **Preconstruction Surveys.** Preconstruction surveys will be conducted by a USFWS-approved biologist. Visual encounter surveys within areas subject to ground-disturbing activities will be conducted immediately prior to commencement of such activities. All suitable aquatic and upland habitats within the BSA including refugia habitat such as under shrubs, downed logs, small woody debris, burrows, etc., will be thoroughly inspected. If a CRLF is observed, the individual(s) will be evaluated and relocated in accordance with the observation and handling protocol outlined below. All fossorial mammal burrows will be inspected for signs of frog usage to the maximum extent practicable. If it is determined that a burrow may be occupied by a CRLF, USFWS will be contacted and work stopped.
3. **Biological Monitoring.** The USFWS-approved biologist will be present during all construction activities where take of a listed species could occur. Through communication with the Resident Engineer or his/her designee, the USFWS-approved biologist may stop work if deemed necessary for any reason to protect listed species and will advise the Resident Engineer or designee on how to proceed accordingly.
4. **Protocol for Species Observation.** If CRLF are encountered in the BSA, work within 50 ft of the animal will cease immediately and the Resident Engineer and USFWS-approved biologist will be notified. Based on the professional judgment of the USFWS-approved biologist, if Project activities can be conducted without harming or injuring the animal(s), it may be left at the location of discovery and monitored by the USFWS-approved biologist. All Project personnel would be notified of the finding and at no time shall work occur within 50 ft of the animal without a biological monitor present.

Foothill yellow-legged frog

Caltrans will implement reasonable and prudent measures to minimize and avoid take of CYLF as identified in the previous section for the CRLF.

Western pond turtle

In addition to the general AMMs, the following avoidance measures will be implemented to protect western pond turtle:

- Qualified biologists will conduct preconstruction surveys for western pond turtles.
- A biological monitor will monitor activities that may affect sensitive biological resources, including western pond turtles.
- Any western pond turtles that are encountered during Project activities would be relocated out of the Project area.
- Water diversion structure will also act as an exclusion barrier within the bed and bank area of the river.

California Central Coast Distinct Population Segment Steelhead

Caltrans will implement all measures to avoid and minimize adverse environmental effects during construction including seasonal avoidance, dry working conditions, a temporary water diversion for fish passage, a fish relocation plan, biological monitoring, SWPPP measures, and post-construction site restoration.

In-channel work will be restricted to the seasonal work window of June 1 to October 15.

The following species-specific measures will be implemented:

- A week prior to the dewatering and potential fish capture activities, NMFS shall be contacted to provide an opportunity for NMFS staff to observe the activities.
- Captured fish shall be handled with extreme care and kept in water to the maximum extent possible during relocation activities. All captured fish shall be kept in cool, shaded, aerated water protected from excessive noise, jostling, or overcrowding any time they are not in the stream, and fish shall not be removed from this water except when released. To avoid predation, the biologist shall have at least two containers and segregate young-of-year fish from larger age-classes and other potential aquatic predators. Captured salmonids will be relocated, as soon as possible, to a suitable in-stream location in which habitat conditions are present to allow for survival of transported fish and fish already present.
- If any salmonids are found dead or injured, the biologist shall contact NMFS immediately.
- All cofferdams, pumps, pipes, and sheet plastic will be removed from the stream upon Project completion; any clean native gravel used for the cofferdams will be left in the channel to augment available spawning habitat but will be graded to ensure the gravel does not impede or prevent fish passage for adult or juvenile salmonids.
- All pumps used to divert live stream flow, outside the dewatered work area, will be screened and maintained throughout the construction period.
- An electronic copy of reporting forms will be provided to NMFS in accordance with NMFS requirements.
- Caltrans will identify fish passage barriers in the Project limits and propose passage improvements for NMFS approval.

Navarro roach

Caltrans will implement all measures to avoid and minimize adverse environmental effects during construction, including seasonal avoidance, dry working conditions, a temporary water diversion for fish passage, a fish relocation plan, biological monitoring, SWPPP measures, and post-construction site restoration.

Sharp-shinned hawk

The following measures will be implemented to avoid or minimize impacts to the sharp-shinned hawk:

- A preconstruction raptor nesting survey for all raptors including sharp-shinned hawk will be conducted throughout the BSA to survey impacted trees and shrubs prior to the beginning of construction during the nesting season (February-August).
- If a sharp-shinned hawk nest is present within the Project area, work within 300 ft of the active nest will be avoided. CDFW will be notified immediately and the biological monitor will work with the agency to determine if additional measures are necessary.

Purple martin

The following additional measures will be implemented to avoid or minimize impacts to the purple martin:

- A preconstruction bird nesting survey will be conducted throughout the BSA to survey impacted trees and shrubs prior to the beginning of construction.
- If an active purple martin nest is present within the Project area, work within 50 ft of the active nest will be avoided. CDFW will be notified immediately and the biological monitor will work with the agency to determine if additional measures are necessary.
- Impacts to this species can be avoided or minimized by implementing the measures previously described, and an onsite riparian revegetation plan will be implemented to restore impacts to the riparian woodland. Therefore, no additional compensatory mitigation for purple martin is proposed.

Pallid bat

The following measures will be implemented to avoid or minimize impacts to pallid bat:

- A preconstruction survey by a CDFW-approved biologist will be conducted within the BSA with a focus on the Project area to identify what species are present. The survey will check the bridge as well as each impacted tree and shrub prior to the beginning of construction for bat sign. If a day roost is identified within the Project area, exclusion measures will be employed prior to the re-colonization of the roost.
- If a pallid bat individual or colony is present within the BSA, work within 200 ft of the roost will be avoided. CDFW will be notified immediately and the biological monitor will work with the agency to determine whether additional measures are necessary.

Townsend's big-eared bat

Impacts to this species can be avoided or minimized by implementing the measures previously described, and an onsite riparian revegetation plan will be implemented to

restore the riparian woodland. Therefore, no additional compensatory mitigation for Townsend's big-eared bat is proposed at this time.

The following measures will be implemented to avoid or minimize impacts to Townsend's big-eared bat:

- A preconstruction capture survey by a CDFW-approved biologist will be conducted throughout the BSA to identify what species are present prior to construction and where their day and night roosts are located. The survey will check the bridge as well as each impacted tree and shrub prior to the beginning of construction for bat sign.
- If a Townsend's big-eared bat individual or colony is present within the BSA, work within 200 ft of the roost will be avoided. CDFW will be notified immediately and the biological monitor will work with the agency to determine whether additional measures are necessary.

Invasive Species

Caltrans will comply with Executive Order 13112, which has been issued to prevent the introduction of invasive species and provide for their control to minimize the economic, ecological, and human health impacts, as well as to reduce the spread of invasive non-native plant species and minimize the potential decrease of palatable vegetation for wildlife species.

In the event that high- or medium-priority noxious weeds, as defined by the California Department of Food and Agriculture or the California Invasive Plant Council, are disturbed or removed during construction-related activities, the contractor would contain the plant material associated with these noxious weeds and dispose of it in a manner that would not promote the spread of the species. The contractor would be responsible for obtaining all permits, licenses and environmental clearances for properly disposing of materials.

Areas subject to noxious weed removal or disturbance will be replanted with fast-growing native grasses or a native erosion control seed mixture. If seeding is not possible, the area should be covered to the extent practicable with heavy black plastic solarization material until the end of the Project.

Migratory Birds

CDFW Code sections 3503 and 3503.5 mandate protection of birds' nests and the MBTA of 1918 as amended (16 U.S.C. §§ 703–711) protects migratory birds from unlawful activities such as "hunting, taking, capture, killing, possession, sale, purchase, shipment, transportation, carriage, or export of any . . . bird, or any part, nest or egg." Any work within the project limits during the nesting season will require protection for migratory nesting birds.

If construction occurs during the anticipated nesting season, i.e., between February 15 and September 1, a qualified Caltrans-supplied biologist(s) will install bird exclusion materials and conduct nesting bird surveys to comply with the CDFW Code and MBTA. The biologist(s) will receive a two-week notice prior to project

implementation to schedule nesting bird surveys. The surveys will be conducted within 48 hours before any ground-disturbing activities occur, including vegetation removal, and will be valid for 3 days, after which new surveys will be conducted. This survey schedule will allow the biologist(s) to remove nests that are started between surveys, well prior to the start of egg-laying. Ground-disturbing activities will not begin until the Caltrans biological monitor has given clearance.

3.10 CONSTRUCTION IMPACTS

3.10.1 Regulatory Setting

Caltrans shall follow the Design Information Bulletin 85: Guidance for the Consideration of Material Disposal, Staging and Borrow Sites and FHWA policies and guidelines when developing the construction implementation plan to minimize temporary impacts from the project.

3.10.2 Affected Environment

During project construction there may be temporary impacts in the following areas: construction phasing/schedule/work hours, noise, air quality (dust), access issues (pedestrian, cyclists, equestrians, etc.), utilities, detours, traffic delays, and impacts associated with the staging and storage of equipment. These issues will be addressed during the Plans, Specification & Estimates (PS&E) phase of the project.

3.10.3 Environmental Consequences

Noise generated by construction equipment will be temporary and correspond to the construction staging plan presented in Chapter 1. Construction equipment should be required to conform to the provisions in Section 14-8.02 Noise Control, of the latest Standard Specifications. These requirements are meant to minimize the impact from short duration construction noise.

3.10.4 Avoidance, Minimization and/or Mitigation Measures

A Traffic Management Plan (TMP) will be developed in detail during the design phase. A TMP typically includes information regarding transportation management measures. Project impacts include lane closures and modified access and transit, pedestrian and bicycle impacts. Transportation management measures include the following components: public information, motorist information, incident management, construction strategies and demand management strategies, and coordination with appropriate City of Calistoga officials and emergency service providers.

In addition to the aforementioned Standard Specifications, construction noise impacts can be minimized by implementing some or all of the following measures:

- Avoiding construction activities during the nighttime and on weekends.
- Constructing noise barriers as the first order of work.
- Using stockpiled dirt as earth berms where possible.
- Keeping noisy equipment and haul roads away from sensitive receptors.
- Keeping the community informed of upcoming especially noisy construction activities and establish a field office to handle noise complaints.
- The pile installation method for the steel casing should be either oversize drilling, or a rotator/oscillator method to minimize vibration impacts to adjacent structures.

Additional recommendation to minimize vibration include:

- A pre-construction survey of existing conditions will be conducted prior to construction including photographs;
- Rotation of the steel casing into the ground for vibratory mitigation;
- A maximum vibration threshold of 0.2 in/sec for adjacent structures;
- Establishment of a 150 foot monitoring zone centered on the pile locations with monitors at the base of individual structures to verify compliance with the impact threshold;
- Construction will stop when the threshold is exceeded, followed immediately by a damage survey of any impacted structures;
- Minimum equipment specifications and operator qualifications will be required.

3.11 CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS

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 has 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), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) make up the largest source of GHG-emitting sources. The dominant GHG emitted is CO₂, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: "Greenhouse Gas Mitigation" and "Adaptation." "Greenhouse Gas Mitigation" is a term for reducing GHG emissions to reduce or "mitigate" the impacts of climate change. "Adaptation" refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)².

There are four primary strategies for reducing 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 cooperatively.³

3.11.1 Regulatory Setting

With the passage of several pieces of legislation including State Senate and Assembly bills and Executive Orders, California launched an innovative and proactive approach to dealing with GHG emissions and climate change.

² http://climatechange.transportation.org/ghg_mitigation/

³ http://www.fhwa.dot.gov/environment/climate_change/mitigation/

State:

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Executive Order (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 the year 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

Assembly Bill 32 (AB 32), Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 sets the same overall GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency (Cal/EPA) and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007): This order set forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Senate Bill 97 (SB 97) Chapter 185, 2007, Greenhouse Gas Emissions: This bill required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the CEQA Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Caltrans Director's Policy 30 (DP-30) Climate Change (approved June 22, 2012): is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. This policy contributes to the Department's stewardship goal to preserve and enhance California's resources and assets.

Federal:

Although climate change and GHG reduction is a concern at the federal level; currently there are no regulations or legislation that have been enacted specifically addressing GHG emissions reductions and climate change at the project level. Neither the United States Environmental Protection Agency (U.S. EPA) nor the FHWA has promulgated explicit guidance or methodology to conduct project-level GHG analysis. As stated on FHWA's climate change website (<http://www.fhwa.dot.gov/hep/climate/index.htm>), climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery. Despite the lack of Federal GHG regulations and legislation, FHWA as well as the National Highway Traffic Safety

Administration (NHTSA) and U.S. EPA are taking steps to lessen climate change impacts by improving transportation system efficiency, creating cleaner fuels, reducing the growth of vehicle hours travelled, and enabling the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines.

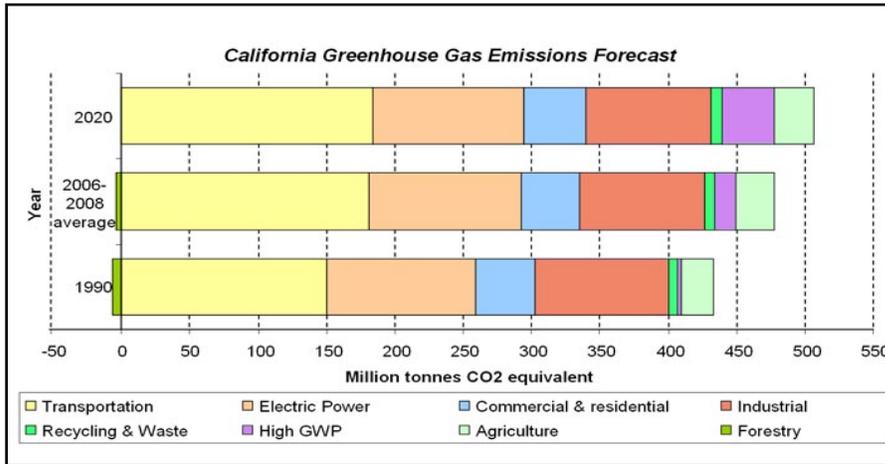
3.11.2 Project Analysis

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contributions of all other sources of GHG.⁴ 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. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

The AB 32 Scoping Plan mandated by AB 32 includes the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, the ARB released the GHG inventory for California (forecast last updated: October 28, 2010). The forecast is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

⁴ This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the U.S. Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

Figure 8. California Greenhouse Gas Forecast



Source: <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>

Caltrans and its parent agency, the Business, Transportation and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California’s GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.⁵

The operation of this project would result in low to no potential for an increase in GHG emissions. The reconstruction of the roadside drainage ditch that is currently undermining the roadway surface will prevent excess maintenance in the future. Without a permanent solution to this, constant maintenance would be required to prevent the road bed from collapsing as well as regular work within the watershed, and potentially causing contamination down stream. This extra maintenance would produce more GHG than the proposed project would produce in construction.

As discussed below, construction emissions will be unavoidable, but there will likely be long-term GHG benefits associated with reduced culvert maintenance due to the sustained damage for which this project is meant to repair.

⁵ Caltrans Climate Action Program is located at the following web address: http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

3.11.3 Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

3.11.4 CEQA Conclusion

Although construction emissions are unavoidable and are expected to be minimal, the proposed project will not increase capacity and is not expected to result in additional operational CO₂ emissions. However, it is Caltrans determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and CEQA significance, it is too speculative to make a determination regarding significance of the project's direct impact and its contribution on the cumulative scale to climate change. However, Caltrans is firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the following section.

3.11.5 Greenhouse Gas Reduction Strategies

There are typically two terms used when discussing the impacts of climate change. "Greenhouse Gas Mitigation" is a term for reducing GHG emissions in order to reduce or "mitigate" the impacts of climate change. "Adaptation," refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels)⁶.

3.11.6 Greenhouse Gas Mitigation

The Department continues to be actively involved on the Governor's Climate Action Team as ARB works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies the Department is using to help meet the targets in AB 32 come from the California Strategic Growth Plan, which is updated each year.

The following measures will be included in the project to reduce the GHG emissions and potential climate change impacts from the project:

⁶ http://climatechange.transportation.org/ghg_mitigation/

1. Landscaping reduces surface warming, and through photosynthesis, decreases CO₂. The project proposes planting in the slopes and drainage improvements. The Department has committed to replace all removed trees based on replacement recommendations provided by the Caltrans landscape architect. These trees will help offset any potential CO₂ emissions increase. Based on a formula from the Canadian Tree Foundation⁷, it is anticipated that the planted trees will offset between 7-10 tons of CO₂ per year.
2. According to the Department's Standard Specifications, the contractor must comply with all of the Bay Area Air Quality Management District rules, ordinances, and regulations regarding air quality restrictions.
3. Compliance with Title 13, California Code of Regulations §2449(d)(3)—Adopted by the Air Resources Board on June 15, 2008, this regulation would restrict idling of construction vehicles to no longer than 5 consecutive minutes. The Contractor must comply with this regulation in order to reduce harmful emissions from diesel-powered construction vehicles.
4. Portland Cement—Use of lighter color surfaces such as Portland cement helps to reduce the albedo effect (measure of how much light a surface reflects) and cool the surface; in addition, Caltrans has been a leader in the effort to add fly ash to Portland cement mixes. Adding fly ash reduces the greenhouse gas emissions associated with cement production—it also can make the pavement stronger.
5. To the extent that it is feasible for the project, the use of reclaimed water may be used to reduce GHG emissions produced during construction. Currently 30 percent of the electricity used in California is used for the treatment and delivery of water. Use of reclaimed water helps conserve this energy, which reduces greenhouse gas emissions from electricity production.

3.11.7 Adaptation Strategies

“Adaptation strategies” refer to how Caltrans and others can 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 intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

⁷ Canadian Tree Foundation at http://www.tcf-fca.ca/publications/pdf/english_reduceco2.pdf. For rural areas the formula is: # of trees/360 x survival rate = tonnes of carbon/year removed for each of 80 years.

Interim guidance was released by The Coastal Ocean Climate Action Team (CO-CAT) as well as Caltrans as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise.

All projects that have filed a Notice of Preparation as of the date of [EO S-13-08](#), and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects may, but are not required to, consider these planning guidelines. The proposed project is outside the coastal zone and direct impacts to transportation facilities due to projected sea level rise are not expected.

Executive Order S-13-08 also directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance and operational improvements of the system, and economy of the state. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

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CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) EVALUATION

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project. Please see the checklist beginning on page 96 for additional information.

<input checked="" type="checkbox"/>	Aesthetics	<input type="checkbox"/>	Agriculture and Forestry	<input type="checkbox"/>	Air Quality
<input checked="" type="checkbox"/>	Biological Resources	<input type="checkbox"/>	Cultural Resources	<input type="checkbox"/>	Geology/Soils
<input type="checkbox"/>	Greenhouse Gas Emissions	<input type="checkbox"/>	Hazards and Hazardous Materials	<input checked="" type="checkbox"/>	Hydrology/Water Quality
<input type="checkbox"/>	Land Use/Planning	<input type="checkbox"/>	Mineral Resources	<input checked="" type="checkbox"/>	Noise
<input type="checkbox"/>	Population/Housing	<input type="checkbox"/>	Public Services	<input type="checkbox"/>	Recreation
<input type="checkbox"/>	Transportation/Traffic	<input type="checkbox"/>	Utilities/Service Systems	<input type="checkbox"/>	Mandatory Findings of Significance

On the basis of this initial evaluation:

<input type="checkbox"/>	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
<input checked="" type="checkbox"/>	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
<input type="checkbox"/>	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
<input type="checkbox"/>	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
<input type="checkbox"/>	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature:	Date:
Printed Name: Yolanda Rivas	For:

Appendices

Appendix A - CEQA Checklist

04-NAP-29

SR 29/37.03

3G640K

Dist.-Co.-Rte.

P.M/P.M.

E.A.

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 indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. 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.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

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

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Expose sensitive receptors to substantial pollutant concentrations? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Create objectionable odors affecting a substantial number of people? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

The proposed project is exempt from the requirement of air quality conformity determination under 40 CFR 93.126, and an air quality study is not required.

BIOLOGICAL RESOURCES: Would the project:

- | | | | | |
|--|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input 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 Game or US Fish and Wildlife Service? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (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 type="checkbox"/> | <input checked="" type="checkbox"/> |

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>

V. CULTURAL RESOURCES: Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) 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"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

VI. GEOLOGY AND SOILS: Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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 type="checkbox"/>	<input checked="" 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 risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

VII. GREENHOUSE GAS EMISSIONS: Would the project:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

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

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) 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"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

IX. HYDROLOGY AND WATER QUALITY: Would the project:

a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	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, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

X. LAND USE AND PLANNING: Would the project:

a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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XI. MINERAL RESOURCES: Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | <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"/> |

XII. NOISE: Would the project result in:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input 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 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"/> |
| f) For a project within the vicinity of a private airstrip, 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"/> |

XIII. POPULATION AND HOUSING: Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 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)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XIV. 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:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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XV. RECREATION:

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|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| 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"/> |

XVI. TRANSPORTATION/TRAFFIC: Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Substantially increase hazards due to a 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"/> |
| e) Result in inadequate emergency access? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) 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"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to 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 type="checkbox"/>	<input checked="" type="checkbox"/>
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	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	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)?	<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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Appendix B - California Natural Diversity Database (CNDDDB)

Existing special-status species data for the BSA and surrounding areas were reviewed in May 2013, prior to conducting the field reconnaissance surveys, and updated in October 2013.

The databases were queried for special-status species occurrences within the Calistoga, Detert Reservoir, Aetna Springs, Saint Helena, Rutherford, Kenwood, Santa Rosa, Mark West Springs, and Mount Saint Helena USGS 7.5-minute quadrangles. Although the entire Project falls within the Calistoga quadrangle, this query was extended to include the eight adjacent quadrangles.

Table B Special-Status Species and Critical Habitat with the Potential to Occur in the BSA

Scientific Name	Common Name	Federal/ State/ CNPS Status ¹	General Habitat Description	Habitat Present/Absent	Potential to Occur	Rationale
Invertebrates						
<i>Branchinecta conservation</i>	Conservancy fairy shrimp	FE/--/--	Rather large, cool-water vernal pools with moderately turbid water	Absent	None	Suitable vernal pool habitat is not present within the BSA.
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	FT, FCH/--/--	Vernal pools, ephemeral alkali pools, seasonal drainages, stock ponds, vernal swales and rock outcrops.	Absent	None	Suitable habitats are not present within the BSA. There are no CNDDDB records listed for this species within 5 mi.
<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	FT, FCH/--/--	Occurs only in the Central Valley of California, in association with blue elderberry (<i>Sambucus nigra</i> ssp. <i>caerulea</i>).	Absent	Very Low	One blue elderberry host plant present within the BSA. There are no CNDDDB records listed for this species within 5 miles. The BSA is outside of the species' known habitat range and provides insufficient habitat to support the VELB (USFWS 2014b). Designated Critical Habitat does not occur in the BSA.
<i>Elaphrus viridis</i>	Delta green ground beetle	FT/--/--	Currently known from vernal pools in Solano County.	Absent	None	Suitable vernal pool habitat is not present within the BSA. There are no CNDDDB records listed for this species within 5 mi.
<i>Lepidurus packardii</i>	Vernal pool tadpole shrimp	FE/--/--	Inhabits vernal pools and swales in the Sacramento valley containing clear to highly turbid water.	Absent	None	Suitable vernal pool habitat is not present within the BSA. There are no CNDDDB records listed for this species within 5 mi.
<i>Speyeria callippe</i>	Calippe silverspot butterfly	FE/--/--	Foothill and valley grasslands. Only known from San Bruno Mountain and one location in Alameda County.	Absent	None	Suitable grassland habitat is not present within the BSA. There are no CNDDDB records listed for this species within 5 mi.
<i>Speyeria myrtleae</i>	Myrtle's silverspot butterfly	FE/--/--	Foothill and valley grasslands, coastal dunes, and coastal bluff scrub. Known from only Marin County.	Absent	None	Suitable upland habitats are not present within the BSA. There are no CNDDDB records listed for this species within 5 mi.

Table B Special-Status Species and Critical Habitat with the Potential to Occur in the BSA

Scientific Name	Common Name	Federal/ State/ CNPS Status ¹	General Habitat Description	Habitat Present/Absent	Potential to Occur	Rationale
<i>Syncaris pacifica</i>	California freshwater shrimp	FE/SE/--	Shallow pools away from mainstream flow with undercut banks with exposed roots. Endemic to Marin, Napa, and Sonoma Counties.	Present	High	Suitable habitat present including low velocities, undercut banks with roots, and overhanging vegetation. Species known from up- and down-stream of the BSA.
Amphibians						
<i>Amboystoma californiense</i>	California tiger salamander	FT ² /ST/--	Grassland, oak savanna, and edges of mixed woodlands. Breeding: vernal pools, temporary rainwater ponds, permanent human-made ponds if predatory fishes are absent.	Absent	None	Suitable upland habitats are not present within the BSA. There are no CNDDDB records listed for this species within 5 mi.
<i>Rana draytonii</i>	California red-legged frog	FT, FCH/ SSC/--	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation; requires 11-20 weeks of permanent water for larval development; must have access to aestivation habitat.	Present	Low	Suitable breeding and marginal dispersal habitat within the BSA. The nearest known location is approximately 10 mi east of the BSA in Capell Valley, Pope Creek/ Lake Berryessa watershed. Another location is known from 30 mi south of the BSA in American Canyon. Designated critical habitat does not occur in the BSA, nor do any recovery units.
<i>Rana boylei</i>	Foothill yellow-legged frog	/--SSC/--	Inhabits partially shaded, rocky streams at low to moderate elevations, in areas of chaparral, open woodland, and forest. Prefers partially shaded, small perennial streams, with at least some cobble-sized rocks; riffle areas and stream depth rarely greater than 1 meter.	Present	Moderate	Suitable breeding and marginal dispersal habitat within the BSA. The nearest known locations are approximately 6 mi southeast of the BSA within the several tributaries of the Napa River watershed.

Table B Special-Status Species and Critical Habitat with the Potential to Occur in the BSA

Scientific Name	Common Name	Federal/ State/ CNPS Status ¹	General Habitat Description	Habitat Present/Absent	Potential to Occur	Rationale
Reptiles						
<i>Actinemys marmorata marmorata</i>	Western pond turtle	--/SSC/--	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation; need basking sites and suitable (sandy banks or grassy open fields) upland habitat for egg-laying.	Present	High	Suitable breeding and foraging habitat within the BSA. Species known from up- and down-stream of the BSA.
<i>Thamnophis gigas</i>	Giant garter snake	FT/ST/--	Marshes, sloughs, drainage canals, and irrigation ditches, especially around rice fields, and occasionally in slow-moving creeks of the Central Valley floor.	Absent	None	Not known from the Napa River Watershed or the BSA. Project is not within the known or expected range of the species.
Fishes						
<i>Acipenser medirostris</i>	Southern Distinct Population Segment North American green sturgeon	FT, FCH/SSC/--	Major rivers of the San Francisco Bay/Estuary, Sacramento-San Joaquin River Delta, and Mainstem Sacramento River.	Absent	None	Not known from the Napa River Watershed or the BSA. Project is not within the known or expected range of the species.
<i>Eucyclobius newberryi</i>	Tidewater goby	FE, FCH/SSC/--	Estuarine-brackish coastal waters.	Absent	None	Estuarine species. No appropriate habitat exists in BSA.
<i>Hypomesus transpacificus</i>	Delta smelt	FE, FCH/SE/--	Shallow, open water of the upper reaches of the Sacramento-San Joaquin River Delta.	Absent	None	Open water/pelagic species, no appropriate habitat exists in BSA.
<i>Hysteroecarpus traski poma</i>	Russian River tulle perch	--/SSC/--	Slower, warmer reaches of streams in the Russian and Navarro River drainages.	Present	None	Not known from the Napa River Watershed or the BSA. Closest known location is 9 mi northwest in the Russian River watershed. Project is not within the known or expected range of the species.
<i>Lavinia symmetricus navarroensis</i>	Navarro roach	--/SSC/--	Habitat generalist. Warm intermittent and cold, well-aerated streams and rivers in the San Francisco and San Pablo Bay watersheds.	Present	Low	Suitable habitat occurs within the BSA and closest known location is approximately 7 mi west of the BSA in the Sonoma Creek Watershed. Project may be within the species range.

Table B Special-Status Species and Critical Habitat with the Potential to Occur in the BSA

Scientific Name	Common Name	Federal/ State/ CNPS Status ¹	General Habitat Description	Habitat Present/Absent	Potential to Occur	Rationale
<i>Oncorhynchus kisutch</i>	Coho salmon-Central California Coast	FE, FCH/SE /--	Smaller coastal streams and rivers with dense riparian cover and perennial stream flows.	Absent	None	Not known from the Napa River Watershed or the BSA. Project is not within the known or expected range of the species.
<i>Oncorhynchus mykiss</i>	Central California Coast Steelhead	FT, FCH/--/--	Coolwater streams and rivers west of Suisun Bay with sufficient year-round flows and adequate water temperatures.	Present	Detected	Known to occupy Napa River.
<i>Oncorhynchus mykiss</i>	Central Valley Steelhead	FT, FCH/--/--	Coolwater streams and rivers west of Suisun Bay with sufficient year-round flows and adequate water temperatures.	Absent	None	Not known from the Napa River Watershed or the BSA. Project is not within the known or expected range of the species.
<i>Oncorhynchus tshawytscha</i>	California Coastal Chinook salmon	FT, FCH/--/--	Rivers and streams south of the Klamath River to the Russian River, California, as well as seven artificial propagation programs: the Humboldt Fish Action Council (Freshwater Creek), Yager Creek, Redwood Creek, Hollow Tree, Van Arsdale Fish Station, Mattole Salmon Group, and Mad River Hatchery fall-run Chinook hatchery programs	Absent	None	Not known from the Napa River Watershed or the BSA. Project is not within the known or expected range of the species.
<i>Oncorhynchus tshawytscha</i>	Chinook salmon-Sacramento River winter-run ESU	FE, FCH/SE /--	Mainstem Sacramento River reaches with sufficient year-round flows and adequate water temperatures.	Absent	None	Species known only from Sacramento River watershed.
<i>Oncorhynchus tshawytscha</i>	Chinook salmon-Central Valley spring-run ESU	FT, FCH/ST/--	Sacramento, Feather, and American River and tributaries with sufficient year-round flows water temperatures.	Absent	None	Species known only from Central Valley watersheds.

Table B Special-Status Species and Critical Habitat with the Potential to Occur in the BSA

Scientific Name	Common Name	Federal/ State/ CNPS Status ¹	General Habitat Description	Habitat Present/Absent	Potential to Occur	Rationale
Birds						
<i>Accipter striatus</i>	Sharp-shinned hawk	--/WL/--	Forages/nests in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers to nest in riparian areas.	Present	Low	Marginal nesting and foraging habitat due to urban surroundings. One known location is approximately 1 mi southwest of the BSA at Fiege Reservoir.
<i>Agelaius tricolor</i>	Tricolored blackbird	--/SSC/--	(Nesting colony) highly colonial species, most numerous in central valley & vicinity. Largely endemic to California. Open water with protected nesting substrates	Absent	None	No suitable nesting habitat within BSA for colony due to lack of wetlands or other protective nesting substrates in the river. Closest known location is approximately 5 mi northeast of the BSA in a freshwater pond dominated by cattails (<i>Typha latifolia</i>).
<i>Charadrius alexandrinus nivosus</i>	Western snowy plover	FT/--/--	Nesting occurs along sandy beaches, salt pond levees, and shores of large alkali lakes on gravelly or friable soils. Federal listing applies only to the pacific coastal population.	Absent	None	No suitable habitat present within the BSA. Project is not within the known or expected range of the species.
<i>Cypseloides niger</i>	Black swift	--/SSC/--	Nests on cliffs behind waterfalls in deep canyons and sea bluffs above the surf. Forages widely.	Absent	None	No suitable habitat present within the BSA. Project is not within the known or expected range of the species. Rare summer resident found nesting on Mt Veeder approximately 7 mi west of the BSA in 1959.
<i>Elanus leucunis</i>	White-tailed kite	--/FP/--	Nests in rolling foothills/valley margins w/scattered oaks & river bottomlands or marshes next to deciduous woodland.	Absent	None	No suitable habitat for nesting or foraging. Closest known location is approximately 9 mi southwest of the BSA in southern Santa Rosa.
<i>Falco mexicanus</i>	Prairie falcon	--/WL/--	Inhabits dry, open terrain. breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	Absent	None	No suitable habitat for nesting, marginal foraging habitat. Locations are known from the region, but are not mapped for protection.

Table B Special-Status Species and Critical Habitat with the Potential to Occur in the BSA

Scientific Name	Common Name	Federal/ State/ CNPS Status ¹	General Habitat Description	Habitat Present/Absent	Potential to Occur	Rationale
<i>Falco peregrines anatum</i>	American peregrine falcon	--/FP/--	Near rivers, on cliffs, banks, dunes, mounds, or human architecture. Nest is a scrape in a depression or a ledge in an open site.	Present	None	No suitable habitat for nesting, marginal foraging habitat. Locations are known from the region, but are not mapped for protection.
<i>Haliaeetus leucocephalus</i>	Bald eagle	--/SE, FP/--	Ocean shore, lake margins, and rivers for both nesting and wintering. Nests within 1 mi of water in large, open-branched live trees.	Absent	None	No suitable habitat for nesting and foraging. Known from one location at Lake Hennessey approximately 12 mi southeast of the BSA.
<i>Pelecanus occidentalis californicus</i>	California brown pelican	FE/--/--	Occurs in marine habitats including coastal bays, estuaries, and marshes. Nests in southern California.	Absent	None	No suitable habitat present within the BSA. Project is not within the known or expected range of the species.
<i>Progne subis</i>	Purple martin	--/SSC/--	Woodlands and forests within old woodpecker cavities of an isolated tree or snag.	Present	Moderate	Woodland habitat is present within the BSA but the presence of snags or other suitable cavities were not confirmed. There is a record of a purple martin observation approximately 6 mi north of the BSA in woodland/chaparral.
<i>Rallus longirostis obsoletus</i>	California clapper rail	FE/SE/--	Salt-water & brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay dominated by pickleweed and cordgrass.	Absent	None	No suitable habitat present within the BSA. Project is not within the known or expected range of the species.
<i>Sternula antillarum</i>	California least tern	FE/SE/--	Nests along the coast from San Francisco Bay south to northern Baja California, Mexico on bare sparsely vegetated, flat substrates such as sand beaches, alkali flats, landfills, or paved areas.	Absent	None	No suitable habitat present within the BSA. Project is not within the known or expected range of the species.

Table B Special-Status Species and Critical Habitat with the Potential to Occur in the BSA

Scientific Name	Common Name	Federal/ State/ CNPS Status ¹	General Habitat Description	Habitat Present/Absent	Potential to Occur	Rationale
<i>Strix occidentalis caurina</i>	Northern spotted owl	FT/SSC/--	Old-growth forests or mixed stands of old-growth and mature trees with cavities or broken tops, woody debris, and space under canopy. Very sensitive to disturbance.	Absent	None	No suitable habitat present within the BSA. Project is not within the known or expected range of the species.
Mammals						
<i>Antrozous pallidus</i>	Pallid bat	--/SSC/--	Deserts, grasslands, shrublands, woodlands, & forests. Most common in open, dry habitats with rocky areas for roosting. In California, common in oak woodlands and grasslands. Very sensitive to disturbance to roost sites.	Present	Moderate	Roosting habitat occurs in BSA. Two historical locations are approximately 0.5 mi north and 3 mi southeast of the BSA.
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	--/PSC, SSC/ -	Throughout California in a wide variety of habitats. Most common in mesic sites and use caves, trees, and man-made structures such as abandoned buildings to roost. Sensitive to human disturbances.	Present	Moderate	Roosting habitat occurs in BSA. Closest known locations are approximately 7 mi east of the BSA.
<i>Martes pennanti</i>	Fisher	PFC/PSC, SSC /--	Coniferous forests and deciduous riparian forests with dense canopies.	Absent	None	No suitable habitat present within the BSA. Project is not within the known or expected range of the species. Closest known locations are approximately 12 mi north of the BSA in coniferous forest.
<i>Reithrodontomys raviventris</i>	Salt marsh harvest mouse	FE/--/--	Nests in the saline emergent wetlands of San Francisco Bay and its tributaries including brackish marshes.	Absent	None	No suitable habitat present within the BSA. Project is not within the known or expected range of the species.
<i>Taxidea taxus</i>	American badger	--/SSC/--	Forest, shrub, and herbaceous habitats; prey on burrowing rodents.	Absent	None	No suitable habitat present within the BSA. Closest known locations are approximately 7 mi north of the BSA in chaparral.

Table B Special-Status Species and Critical Habitat with the Potential to Occur in the BSA

Scientific Name	Common Name	Federal/ State/ CNPS Status ¹	General Habitat Description	Habitat Present/Absent	Potential to Occur	Rationale
Plants						
<i>Alopecurus aequalis</i> var. <i>sonomensis</i>	Sonoma alopecurus	FE/--/1B.1	Riparian scrub, marshes, and swamps (freshwater). Endemic to Marin, Sonoma, and Napa Counties. 5-365 meters. Blooms May-July.	Absent	None	No marsh habitat or riparian scrub within the BSA. The BSA is out of species known range.
<i>Astragalus claranus</i>	Clara Hunt's milk-vetch	FE/--/1B.1	Cismontane woodland, valley and foothill grassland, and chaparral; endemic to Napa and Sonoma Counties; on clay soil, 75-235 meters. Blooms March-May.	Absent	None	Suitable upland habitat conditions do not exist in the BSA.
<i>Blennosperma bakeri</i>	Sonoma sunshine	FE/SE/1B.1	Vernal pools and mesic foothill and valley grasslands. 10-110 meters. Blooms March-May.	Absent	None	Suitable mesic upland habitat conditions do not exist in the BSA.
<i>Castilleja affinis</i> ssp. <i>neglecta</i>	Tiburon paintbrush	FE/ST/1B.2	Serpentine grasslands. 60-400 meters. Blooms April-June.	Absent	None	Suitable serpentine grassland habitat does not exist in the BSA.
<i>Carex albida</i>	White sedge	FE/SE/--	Freshwater marsh. Endemic to Sonoma County from one location in Pitkin marsh. Blooms May-July.	Absent	None	Freshwater marsh habitat does not occur in the BSA. Project is not within the known or expected range of the species.
<i>Cordylanthus mollis</i> ssp. <i>mollis</i>	Soft bird's-beak	FE/SR/1B.2	Coastal salt marshes and swamps. 0-3 meters. Blooms July- November.	Absent	None	Freshwater marsh habitat does not occur in the BSA. Project is not within the known or expected range of the species.
<i>Eryngium constancei</i>	Loch Lomond coyote- thistle	FE/ST/1B.1	Vernal pools. 460-855 meters. Blooms April-June.	Absent	None	Vernal pool habitat does not occur in the BSA. Project is not within the known or expected range of the species.
<i>Lasthenia burkei</i>	Burke's goldfields	FE/SE/1B.1	Vernal pools and mesic meadows and seeps. 15-600 meters. Blooms April-June.	Absent	None	Suitable mesic upland habitat conditions do not exist in the BSA.
<i>Lasthenia conjugens</i>	Contra Costa goldfields	FE, FCH/1B.1	Cismontane woodland, valley and foothill grassland, playas, and vernal pools. 0-470 meters. Blooms March-June.	Absent	None	Suitable mesic upland habitat conditions do not exist in the BSA. Designated critical habitat does not occur in the BSA for this species.

Table B Special-Status Species and Critical Habitat with the Potential to Occur in the BSA

Scientific Name	Common Name	Federal/ State/ CNPS Status ¹	General Habitat Description	Habitat Present/Absent	Potential to Occur	Rationale
<i>Limnanthes vinculans</i>	Sebastopol meadowfoam	FE/SE/1B.1	Vernal pools, mesic meadows and seeps, and valley and foothill grasslands. 15-305 meters. Blooms April-May.	Absent	None	Suitable mesic upland habitat conditions do not exist in the BSA.
<i>Navarretia leucocephala</i> ssp. pauciflora	Few-flowered navarretia	FE/ST/1B.1	Vernal pools underlain by volcanic ash flow. 400-855 meters. Blooms May-June.	Absent	None	Suitable vernal pool habitat does not exist in the BSA. Project is not within the known or expected range of the species.
<i>Navarretia leucocephala</i> ssp. plieantha	Many-flowered navarretia	FE/SE/1B.2	Vernal pools underlain by volcanic ash flow. 30-950 meters. Blooms May-June.	Absent	None	Suitable vernal pool habitat does not exist in the BSA.
<i>Plagiobothrys strictus</i>	Calistoga allocarya	FE/ST/1B.1	Vernal pools, meadows and seeps, and valley and foothill grasslands. 90-160 meters. Blooms March-June.	Absent	None	Suitable mesic upland habitat conditions do not exist in the BSA.
<i>Poa napensis</i>	Napa blue grass	FE/SE/1B.1	Meadows and seeps, and valley and foothill grasslands in alkaline soils. Often near thermal springs. 100-200 meters. Blooms May-August.	Absent	None	Suitable alkaline upland habitat conditions do not exist in the BSA.
<i>Sidalcea keckii</i>	Keck's checker-mallow	FE/--/1B.1	Cismontane woodland, valley and foothill grassland with clay or serpentine soils. 75-650 meters. Blooms April-June.	Absent	None	Suitable upland habitat conditions with serpentine soils do not exist in the BSA.
<i>Sidalcea oregana</i> ssp. <i>valida</i>	Kenwood marsh checkermallow	FE/SE/1B.1	Marshes and swamps (freshwater). 115-150 meters. Blooms June-September.	Absent	None	Suitable marsh habitat conditions do not exist in the BSA.
<i>Trifolium amoenum</i>	Showy Indian clover	FE/--/1B.1	Coastal bluff scrub, valley and foothill grassland. 5-415 meters. Blooms April-June.	Absent	None	Suitable upland habitat conditions do not exist in the BSA.

Table B Special-Status Species and Critical Habitat with the Potential to Occur in the BSA

Scientific Name	Common Name	Federal/ State/ CNPS Status ¹	General Habitat Description	Habitat Present/Absent	Potential to Occur	Rationale
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Notes:

¹ Federal Status:

FCH – Designated Federal Critical Habitat

FE – Federally endangered

FT – Federally threatened

PFC – Proposed Federal Candidate Species

State Status:

FP – State Fully Protected

PSC – Proposed State Candidate Species

SE – State endangered

SSC – California Department of Fish and Wildlife Species of Special Concern

ST – State threatened

WL- State Watch List

California Native Plant Society Status:

1B–Plants rare, threatened, or endangered in California and elsewhere.

² CTS federal listing does not include Napa County.

ESU – Evolutionarily Significant Unit

Appendix C - Title VI Policy Statement

DEPARTMENT OF TRANSPORTATION

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March 2013

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in 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) 324-0449, TTY: 711, or via Fax: (916) 324-1949.

A handwritten signature in blue ink, appearing to read "Malcolm Dougherty".

MALCOLM DOUGHERTY
Director

"Caltrans improves mobility across California"

Appendix D - List of Acronyms

ARB	Air Resource Board
BEES	Basic Engineering Estimating System
BMP	Best Management Practice
BNHM	Berkeley Natural History Museum
CalEPA	California Environmental Policy Act
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CO	Carbon Monoxide
CSMP	Construction Site Monitoring Program
dBA	A-weighted decibels Decibels
DSA	Disturbed Soil Area
EA	Environmental Assessment
ESAs	Environmentally Sensitive Areas
FCAA	Federal Clean Air Act
FHWA	Federal Highway Administration
FTA	Federal Transportation Administration
GHG	Green House Gas
GIS	Geographic Information System
ITS	Intelligent Transportation System
LOS	Level of Service
MPO	Metropolitan Planning Organization
MSL	Mean Sea Level
MTC	Metropolitan Transportation Commission
NAAQA	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
OSHA	Occupational Safety & Health Act
PS&E	Plans, Specifications and Estimates
R/W	Right of Way
RCRA	Resource Conservation and Recovery Act of 1976
REAP	Rain Event Action Plan
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SDC	Seismic Design Criteria
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
TIP	Transportation Improvement Program
TMDL	Total Maximum Daily Load
TOAR	Transportation Operations Analysis Report
TSCA	Toxic Substances Control Act
UCMP	UC Paleontology Museum Database
USDOT	United States Department of Transportation
VMT	Vehicle Miles Travelled
VOC	Volatile Organic Compounds

Appendix E - Summary floodplain Encroachment Report

SUMMARY FLOODPLAIN ENCROACHMENT REPORT

Dist. 04 Co. Napa Rte. 29 P.M. 37.03
 Project No.: 3G6400 Bridge No. 21-0018

Limits: The project replaces the Napa River Bridge (#21-0018) on State Route 29 in the City of Calistoga is not expected to change the limits of the existing bridge. The design of the proposed single-span bridge would not significantly modify the bridge opening area.

Floodplain Description: The Napa River floodplain at the project site is classified as Zone AE on the FEMA FIRM with a base flood elevation of approximately 350.5' (NAVD88). In addition, Napa River in the project vicinity is classified as regulatory floodway.

- | | No | Yes |
|---|----------|----------|
| 1. Is the proposed action a longitudinal encroachment of the base floodplain? | <u>X</u> | ___ |
| 2. Are the risks associated with the implementation of the proposed action significant? | <u>X</u> | ___ |
| 3. Will the proposed action support probable incompatible floodplain development? | <u>X</u> | ___ |
| 4. Are there any significant impacts on natural and beneficial floodplain values? | ___ | ___ |
| 5. Routine construction procedures are required to minimize impacts on the floodplain. Are there any special mitigation measures necessary to minimize impacts or restore and preserve natural and beneficial floodplain values? If yes, explain. | ___ | ___ |
| 6. Does the proposed action constitute a significant floodplain encroachment as defined in 23 CFR, Section 650.105(q). | <u>X</u> | ___ |
| 7. Are Location Hydraulic Studies that document the above answers on file? If not explain. | ___ | <u>X</u> |

PREPARED BY:

Katka Reilly
 Signature - Dist. Hydraulic Engineer

3/28/14
 Date

Yolanda Rivas
 Signature - Dist. Environmental Branch Chief

4/17/14
 Date

Babushkin
 Signature - Dist. Project Engineer

04/14/14
 Date

List of Technical Studies

1. Habitat and Fish Passage Assessment, SR 29 Napa River Bridge Replacement Project, Office of Biological Sciences and Permits, California Department of Transportation (2014)
2. Natural Environment Study, Napa River Bridge Scour Replacement Project, Office of Biological Sciences and Permits, California Department of Transportation (2014)
3. Biological Assessment for California Red-legged Frog and California Freshwater Shrimp, Office of Biological Sciences and Permits, California Department of Transportation (2014)
4. Visual Impact Assessment, Napa River Bridge #21-0018, Office of Landscape Architecture, California Department of Transportation (2014)
5. Paleontology Identification Report (PIR) for Replacing Napa River Bridge, Office of Geotechnical Design-West, California Department of Transportation (2013)
6. Preliminary Hydraulics Report (PHR), Structure Hydraulics & Hydrology Branch, California Department of Transportation (2011)
7. Preliminary Hydraulics Report (PHR), Structure Hydraulics & Hydrology Branch, California Department of Transportation (2014)
8. Preliminary Foundation Report (PFR), Office of Geotechnical Design-West, California Department of Transportation (2011)
9. Location Hydraulic Study, Structure Hydraulics & Hydrology Branch, California Department of Transportation (2014)
10. Summary Floodplain Encroachment Report, Structure Hydraulics & Hydrology Branch, California Department of Transportation (2014)
11. Water Quality Study Report, Office of Water Quality, California Department of Transportation (2013)
12. Storm Water Data Report, Office of Water Quality, California Department of Transportation (2014)
13. Project Scope summary Report (Structure Rehabilitation), to Request Programming in the 2012 SHOPP, Office of Right of Way and Land Surveys, California Department of Transportation (2011)
14. Historic Property Survey Report for the Napa River Bridge Replacement Project on State Route 29 in the City of Calistoga, Napa County, California. Office of Cultural Resource Studies, California Department of Transportation (2014).
15. Historical Resources Evaluation Report for the Napa River Bridge Replacement Project on State Route 29 in the City of Calistoga, Napa County, California. Office of Cultural Resource Studies, California Department of Transportation (2014).

16. Archaeological Survey Report for the Napa River Bridge Replacement Project on State Route 29 in the City of Calistoga, Napa County, California. Office of Cultural Resource Studies, California Department of Transportation (2014).

17. Extended Phase I Investigation for the Napa River Bridge Replacement Project, Calistoga, Napa County, California. Far Western Anthropological Research Group, Inc., Davis, California (2014).

18. Environmentally Sensitive Area and Archaeological Monitoring Area Action Plan for the Napa River Bridge Replacement Project on State Route 29 in the City of Calistoga, Napa County, California. Office of Cultural Resource Studies, California Department of Transportation (2014).

19. Finding of No Adverse Effect for the Napa River Bridge Replacement Project on State Route 29 in the City of Calistoga, Napa County, California. Office of Cultural Resource Studies, California Department of Transportation (2014).