



Mitigated Negative Declaration

Sonoma County Permit and Resource Management Department

2550 Ventura Avenue, Santa Rosa, CA 95403
(707) 565-1900 FAX (707) 565-1103

Publication Date: 7/23/2021
Public Review Period: 7/23- 8/23/2021
State Clearinghouse Number:
Prepared by: Jackson Ford
Phone: (707) 565-8356

Pursuant to Section 15071 of the State CEQA Guidelines, this proposed Negative Declaration and the attached Initial Study, constitute the environmental review conducted by the County of Sonoma as lead agency for the proposed project described below:

Project Title: Geysers Road over Big Sulphur Creek Bridge Replacement Project

Lead Agency: Sonoma County

Project Applicant/Operator: Sonoma County Department of Transportation and Public Works

Project Location/Address: Geysers Road over Big Sulphur Creek

Decision Making Body: County of Sonoma Board of Supervisors

Project Description: The Department of Transportation Public Works proposes to replace the existing bridge on Geysers Road over Big Sulphur Creek, east of Cloverdale CA. The existing bridge will be replaced with a three-span concrete box girder bridge, 32 feet total width. The new bridge will be on a new alignment downstream of the existing. The existing structure is a Historic County Landmark structure that will remain in place. **See Item III, below of the Initial Study for additional details.**

Environmental Finding: The Sonoma County Environmental Review Committee has determined, on the basis of the attached Initial Study, the project described above would not have a substantial adverse impact on the environment, provided that the mitigation measures identified in the Initial Study are included in the project.

Initial Study: See attached. For more information please contact Jackson Ford, Senior Environmental Specialist, at (707) 565-8356.

Mitigation Measures: Included in attached Initial Study. The project applicant has agreed to implement all mitigation measures.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" or "Less than Significant with Mitigation" as indicated in the attached Initial Study and in the summary table below.

Table 1. Summary of Topic Areas

| Topic Area | Abbreviation* | Yes | No |
|------------------------------------|----------------------|------------|-----------|
| Aesthetics | VIS | X | |
| Agriculture & Forestry Resources | AG | | X |
| Air Quality | AIR | X | |
| Biological Resources | BIO | X | |
| Cultural Resources | CUL | X | |
| Energy | ENERGY | | X |
| Geology and Soils | GEO | X | |
| Greenhouse Gas Emission | GHG | | X |
| Hazards and Hazardous Materials | HAZ | X | |
| Hydrology and Water Quality | HYDRO | X | |
| Land Use and Planning | LU | | X |
| Mineral Resources | MIN | | X |
| Noise | NOISE | | X |
| Population and Housing | POP | | X |
| Public Services | PS | | X |
| Recreation | REC | | X |
| Transportation | TRANS | X | |
| Tribal Cultural Resources | TCR | X | |
| Utilities and Service Systems | UTL | | X |
| Wildfire | FIRE | X | |
| Mandatory Findings of Significance | MFS | X | |

RESPONSIBLE AND TRUSTEE AGENCIES

The following lists other public agencies whose approval is required for the project, or who have jurisdiction over resources potentially affected by the project.

Table 2 list the agencies and other permits that will be required to construct and/or operate the project. Leave this section out if there are no permits required. (Include only applicable Agencies)

| Table 2. Agency | Activity | Authorization |
|--|---|---|
| U. S. Army Corps of Engineers | Wetland dredge or fill | Clean Water Act, Section 401 |
| U. S. Army Corps of Engineers | Work in navigable waters | Rivers and Harbors Act, Section 106 |
| Regional Water Quality Control Board (North Coast) | Discharge or potential discharge to waters of the state | California Clean Water Act (Porter Cologen) – Waste |

| | | |
|--|--|---|
| | | Discharge requirements, general permit or waiver |
| Regional Water Quality Control Board (North Coast) | Wetland dredge or fill | Clean Water Act, Section 404 |
| State Water Resources Control Board | Generating stormwater (construction, industrial, or municipal) | National Pollutant Discharge Elimination System (NPDES) requires submittal of NOI |
| California Department of Fish and Wildlife | Lake or streambed alteration | Fish and Game Code, Section 1600 |
| NOAA Fisheries/ National Marine Fisheries Service (NMFS) | Incidental take permit for listed plant and animal species | Endangered Species Act |
| Native American Heritage Commission | | |
| State Historic Preservation Office | | |

ENVIRONMENTAL FINDING:

Based on the evaluation in the attached Expanded Initial Study, I find that the project described above will not have a significant adverse impact on the environment, provided that the mitigation measures identified in the Initial Study are included as conditions of approval for the project and a Mitigated Negative Declaration is proposed. The applicant has agreed in writing to incorporate identified mitigation measure into the project plans.

Jackson Ford
Prepared by:

July 6, 2021
Date



Initial Study

Sonoma County Permit and Resource Management Department

2550 Ventura Avenue, Santa Rosa, CA 95403
(707) 565-1900 FAX (707) 565-1103

I. INTRODUCTION:

The Sonoma County Department of Transportation and Public Works proposes to replace the Geysers Road Bridge over Big Sulphur Creek (Bridge number 20C-005) with a new bridge located just downstream of the existing bridge. A referral letter was sent to the appropriate local, state and federal agencies and interest groups who may wish to comment on the project.

This report is the Initial Study required by the California Environmental Quality Act (CEQA). The report was prepared by Jackson Ford, Senior Environmental Specialist, with the Sonoma County Permit and Resource Management Department, Natural Resources Division. Information was provided by Sonoma County Department of Transportation and Public Works. Additional information was provided by various consultants as identified in this Initial Study. Technical studies referred to in this document are available for review at the Permit and Resource Management Department (Permit Sonoma).

Please contact Jackson Ford, Sr. Environmental Specialist, at (707) 565-8356, for more information.

II. EXISTING FACILITY

The existing single-lane bridge is one span of a three-span iron truss bridge which records indicate was originally a railroad bridge. It was reconstructed in 1909 and placed over the Russian River near Monte Rio. In 1937, the bridge was disassembled, and one of the spans was moved and reassembled at its present location over Big Sulphur Creek. At that time, a 16-foot long concrete span was added to the 130-foot long truss span, for a total bridge length of 146 feet. The Geysers Road Bridge is eligible for the National Register of Historic Places and is a Sonoma County Historic Landmark.

The current Caltrans Bridge Inspection Report (July 2017) shows a sufficiency rating of 50.3 of a possible 100, and a status of functionally obsolete. Caltrans listed and approved funding for this bridge under the seismic retrofit program because it does not meet current seismic standards. After discussion with Caltrans staff, the Sonoma County Department of Transportation and Public Works (DTPW) determined that a new bridge could be funded and built (seismic replacement), with the existing bridge left in place.

The bridge carries a daily traffic volume of under 400 ADT (average daily traffic). Current minimum AASHTO highway design standards (AASHTO Geometric Design of Highways and Streets 2011, Tables 5-5 & 5-6) require that a new bridge carrying an ADT of less than 400 shall have minimum 9-foot lanes and 2-foot shoulders. This requirement would call for a clear roadway width of 22 feet. However, this road is a primary access from the west up to the Geysers Geothermal field and power plants. Therefore 11-foot lanes and 3-foot shoulders lanes were proposed and approved.

Replacing this one lane, seismically deficient bridge with a new bridge that is fully AASHTO compliant (including current seismic standards) will provide this bridge with low maintenance costs and sustainability for the future. Minor maintenance of the existing historic bridge will allow it to remain in place as an

historic landmark.

III. PROJECT DESCRIPTION

The Sonoma County Department of Transportation and Public Works (DTPW) would construct a new bridge downstream of the existing bridge, which would remain in its present location. After construction is complete, the existing bridge would be closed to vehicle traffic, including pedestrians and cyclists. DTPW would conduct minor rehabilitation of the existing bridge. The alignment of the new bridge would curve across the stream to ease the existing abrupt, short radius turn at the southeast end of the bridge.

The proposed bridge would be a multi-span (three spans) concrete box girder bridge. It would be total 32' wide having two 11' travel lanes, two 3' wide shoulders and two 2' wide ST-70 bridge rail systems. There will be no sidewalks or a dedicated bike lane.

Piers would likely be large-diameter (84") cast in drilled-hole (CIDH) or cast in steel shell (CISS) piles. The abutment supports would likely be 24" CIDH piles. The elevation for the new bridge deck would be approximately 881.5'. Both the proposed bridge and existing bridge will maintain 1.2' of freeboard from lowest bridge soffit to the 100-year flood event water surface elevation.

Piers would be located outside the low-flow channel. During project construction, the creek would be diverted through culverts (or crossed with a temporary platform) and a gravel work pad would be constructed in the channel for equipment access to both banks.

The approach roadways would need to be widened and realigned to match the alignment of the new bridge and ease the abrupt curve on the southeast end of the bridge. The approach roadway on the southeast end would be realigned to provide a 25 mph design speed and raised by placing a small amount of fill to meet the new required bridge grade. The approach widening would accommodate two 11' lanes, two 3' shoulders, and drainage for a distance of about 150 feet, and then tapered back to the existing roadway beyond 150 feet. Approach guardrail would be installed approximately 75 feet in advance of the new bridge abutment.

At the northwest end of the bridge, the approach road would be realigned to provide a 25 mph design speed while minimizing encroachment into the floodplain of Big Sulphur Creek. The approach road on the northwest end of the bridge would be raised to the new required bridge elevation by placing fill, and would also be widened with two 11' lanes, two 3' shoulders, plus approach guardrail and drainage for a distance of about 275 feet, and would taper back to the existing roadway beyond 80 feet. Retaining wall would be required on the downslope side of the road for a distance of approximately 205 feet.

The existing bridge would remain open to traffic while the new bridge is being constructed. When the new bridge is open to traffic, DTPW will conduct minor maintenance of the existing historic bridge, after which the bridge will be closed to all traffic. Maintenance work is described below.

Existing Bridge Repair

After traffic is switched onto the new bridge, the existing west and east approaches would be used as staging areas for maintenance of the existing truss bridge. The proposed maintenance items are expected to include:

- Tighten all nuts on the truss pins to prevent lateral movement of the connecting members.
- Tighten all diagonal-sway tension members.
- Adjust/tighten seismic restrainer cables.
- Clean the dirt and debris away from the bearings of the truss.
- Vacuum, sweep, spot patch existing pot holes and apply a sealer coat to the AC deck.

Generators, air compressors and small cranes can be used to facilitate maintenance activities. No traffic disruptions are required for truss maintenance operations. Requirements to contain dirt & debris during the cleaning process would be added to the specifications and contractor would be required to submit a debris containment plan to ensure debris is kept out of the channel.

Right of Way

The project would require right-of-way (ROW) acquisition or permanent easements from the two adjacent parcels (APNs 117-220-029 and 117-130-002). The project would also require temporary construction easements from these same parcels.

Construction Staging Areas and Construction Access

A pullout area and road shoulder located at the southeast end of the bridge would be used for staging activities, including equipment and materials storage. To construct the bridge, equipment would be staged from the road shoulder and a temporary gravel work pad within the channel of the creek (see below for a description of the work pad installation). Construction equipment will not be stored in the creek channel during off work hours. At the northeast end of the bridge there currently is an existing graded road providing access directly the channel, in the event the contractor needs another access point then a temporary access would be graded.

Construction Phasing and Methods

The following describes the likely construction scenario, though materials, equipment or sequencing could vary depending on the contractor selected to construct the project.

DTPW would construct the project over one construction season, with work in the wetted channel permitted to occur between June 15 and October 15, below top of bank but outside the wetted channel could commence May 15. Tree removal could occur during the winter preceding construction, to avoid the bird-nesting season. Tree removal includes removal and pruning of shrubby riparian vegetation along the bridge alignment, and six tree removals at the abutments and along the bridge approaches. Pruning may also be required adjacent to the existing bridge in order to rehabilitate the existing bridge. Tree and vegetation removal would be the minimum necessary to construct the project.

Work Pad Installation

After June 15, a work pad would be installed in Big Sulphur Creek. On the northwest side, the bridge alignment crosses a large gravel bar for approximately 50-60 feet, and the summer low flow channel is approximately 30-40 feet across at the pad location. The pad would extend across the entire stream bed to provide a level, compacted working surface for the drill rig to sit on, and to support falsework/formwork for pouring the bridge deck. The work pad would extend 30 feet upstream and downstream of the proposed 32-foot wide bridge alignment, for a total pad length of approximately 92 feet. The pad could be longer if access to the channel is required for rehabilitation of the existing bridge. Pad depth would be approximately two feet thick and constructed of clean river run material with a top layer of aggregate base for stability.

To install the pad, block nets would first be installed at the upstream end of the pad by a qualified fisheries biologist. Fish would be then be herded downstream out of the project area to the extent feasible. A downstream block net would then be installed to create an isolated work area. The biologist would relocate any fish remaining in the work area to a suitable downstream habitat.

Next, culvert(s) would be placed on the stream bed to limit water contact with the construction work pad. The engineer would provide hydraulic calculations to ensure creek flow and velocities within the culverts are conducive for habitat life. Prior to placing the culverts, any low spots within the culvert alignment would be leveled by placing small amounts of clean river run gravel on the stream bed. Excavation of the channel bottom would not be necessary. Culverts would be placed with equipment operating from the existing gravel bar, outside the flowing water.

Culverts would be installed in such a manner to not back up water upstream of the work pad, and to not substantially increase velocities over the existing stream flow at the outlet of the culverts. The number and size of culverts used would be determined based on stream flow conditions at the time of construction. To ensure that hydraulic conditions are suitable and the temporary work platform would not impede the movement of aquatic organisms, the culverts will be designed and would be installed in accordance with to NMFS' *Guidelines for Salmonid Passage at Stream Crossings* (National Marine Fisheries Service 2001). A short temporary crossing via a trestle system using steel beams supported on steel bin walls, boxes or similar filled with gravel could be used as an alternative to culverts, however it would also have to be sized so as not to substantially increase stream velocities.

Once the bypass culverts are in place, a dam of imported clean river-run gravel and K-rails would be used to direct the water into the culverts. Dam construction will be limited to equipment operating from the existing gravel bar, outside the flowing water. The diversion dam would be lined with impermeable plastic and would be located approximately 30 feet upstream of the existing bridge structure. A filter dam, lined with filter fabric, would be constructed at the downstream end of the work pad. Material to construct the downstream dam would be lowered into the channel by an excavator working from the existing gravel bar.

Once upstream and downstream dams are in place, the work pad would be completed by filling in the confined pool between the two dams with imported clean river run material with a top layer of aggregate base for stability. A fabric layer could be placed between the river-run gravel and base rock layer to ease removal following construction. Gravel would be placed at such a rate that displaced water does not overtop either dam. This would be accomplished by either pumping out the trapped water while depositing the clean river-run gravel or by adding the gravel slowly enough for the filter dam to sieve the water through its mesh. If water is pumped out, it would be pumped either: 1) to a holding tank for storage and disposal, 2) to an upland location where it would not drain back into the creek, 3) to an onsite stilling basin (with CA Water Board pre-approval of design and location). The layer of compactable aggregate (crushed rock) to be placed on top of the river-run gravel would not exceed the minimum amount needed to provide sufficient support for the safe and efficient operation of heavy equipment. Loss of compactable aggregate over the edges of the work pad would be avoided by maintaining a minimum buffer of uncovered river-run gravel at the ends of the work pad. The block nets would be removed once the pad was complete.

Bridge Construction

Once the pad is complete, drilling for the piers would begin. A drill rig sitting on the work pad would drill the holes for the pier foundation. If the geotechnical investigations show deep unconsolidated materials beneath the stream bed, steel casing would likely be used to keep the holes from collapsing. If steel casings are used, drilling fluids would be used only to lubricate the drill. If casing are not used, drilling fluids would be used to keep the drilled holes from collapsing. Drilling fluids would be recovered from the drilled holes and contained in tanks for recycling/re-use or disposal off site. Drill cuttings would be disposed of offsite in a permitted manner. Once the hole(s) are ready, steel cage reinforcement(s) would be lowered into the holes by crane and then filled with poured concrete. Water that seeps into the drilled holes, which is then displaced when the concrete is poured, would be pumped to tanks and then to trucks for off-site disposal.

For the abutment foundations, roadway fill would be placed along the new alignment. The area at each abutment would be graded. A drill rig would operate from the fills to drill holes for the concrete piles. Work for abutment construction would not require an access road down the bank. Excavation would be required for the placement of rock slope protection. Excavated materials would be stored and be reused onsite for final roadway grade finishing and engineered fill construction. Armoring with rock slope protection will be required on creek banks and will extend approximately 30 feet upstream of the existing bridge to approximately 15 feet downstream of the proposed bridge.

Steel reinforcement for piles would be prefabricated and lowered using a crane. Steel reinforcement and formwork for abutments and wing walls may be installed in-place by hand or prefabricated and lowered into place by crane. A concrete pump would be located on new fill and used to transfer concrete from the

delivery trucks to the pour locations. Backfilling of the abutments would occur once the concrete has cured.

Next, wood falsework and formwork for pouring of the bridge superstructure would be constructed on the work pad. The concrete bridge would be cast in place. Necessary equipment includes cranes, generators, air compressors and a concrete pump located at each approach.

Concrete delivery for the west approach can be achieved without roadway closures; delivery to the east approach may require brief roadway closures (15 minutes or less).

After the stem and soffit concrete has cured, formwork and reinforcing steel would be placed and the deck poured. A temporary work platform alongside the deck would be built, supported from the falsework. Equipment needed for this work would be placed on the approach fills. Forms, temporary work platform and falsework would be removed after the deck is cured. During concrete pour the creek will be protected from spillage and other contaminating debris. It will be the contractor's responsibility to provide a containment plan for accomplishing this task.

Then the bridge barriers (railings) would be constructed. Rebar would be placed, standard metal forms secured and the concrete would be cast.

Roadway Approach Construction

Retaining wall (of approximately 205 feet in length) would be constructed along the western approach. Where possible, engineered fill will be used in lieu of retaining walls. Temporary K-rails will be placed between traffic and the construction zone for safety.

Engineered fill would be compacted in 12" lifts and reinforced with geotextile fabric for strength. Erosion control blankets would be placed on the face of all new slopes for protection. Prior to placement of the erosion control blankets the slopes would be seeded to match local grasses and groundcover plants.

K-rails would be used as the primary safety barrier along new approaches until the installation of guard rail has been completed. Embankment fill would extend as far as the edges of the existing roadway initially, as to reduce any abrupt elevation changes between the existing and new approach grades. Once traffic has been directed on to the new bridge the older existing approaches will be removed and replanted.

An existing 48" diameter culvert below the roadway west of the bridge would be removed and replaced with a reinforced concrete pipe and headwall. Also, two existing culverts below the roadway east of the bridge (believed to be 18" diameter) would be removed and replaced with reinforced concrete pipe with drop inlets. Removal and replacement of the old culverts would require trenching and a temporary short-duration roadway closure. Signage, flagmen and steel plate trench covers would be utilized to minimize these closures and allow emergency vehicles to pass with only a short delay (5 minutes or less to place the trench cover plates).

The reinforced concrete approach slabs would be formed and cast in place. The metal beam guard rails along the shoulders of the new approaches would be installed. Asphalt paving for the new approach roadways would occur.

Materials and equipment would be removed from the new bridge and approaches and the completed portions of the new roadways would be striped and prepared to receive traffic.

Work Pad Removal

Following the completion of in-channel work, and prior to October 15, the work pad would be removed as described below. Immediately prior to work pad removal, block nets, or another suitable method identified by a fisheries biologist, would be installed upstream of the work pad to prevent fish from entering the water diversion culverts. The compactable aggregate layer of the pad would be removed and loaded

directly onto a truck for transport and disposal at an acceptable location. After all of the compactable aggregate is removed from the top, as much river-run gravel would be removed from the pad as is feasible without encountering water or onsite gravels. River-run gravel would also be removed to expose the water diversion culverts. The culverts would then be lifted out of the channel, starting with the downstream section of each culvert, working back upstream. Each culvert section would be lifted slowly from the upstream end, so that water remaining in the culvert would flow out in the downstream direction. A qualified biologist would be onsite during culvert removal in the unlikely event that any fish remain in the culvert or become stranded by the culvert removal. The biologist would inspect any areas of ponded water created by removal of each section of culvert to ensure they are clear of fish. Then workers using hand shovels would smooth out the gravel to re-establish normal flow through the channel created where the culvert was removed. The remaining river-run gravel would be left in the channel to be transported downstream with winter flows. After the pad has been smoothed and the re-established channel has stabilized, all equipment would be removed from below top of bank, along with all surplus materials and debris. The block nets would be removed and fish would be allowed to return to the site.

Temporary disturbance areas, above top-of-bank, will be protected from erosion by standard specifications including; seeding, straw wattles and/or erosion control blankets.

Project Completion

A sign will be installed at the northern end of the old bridge which will describe its' historical significance as well as some other general information about the structure. Also, for public safety reasons, "No Trespassing" signs will be posted at either end of the existing structure.

All construction equipment, materials and debris would be removed from the site and the project would be complete.

IV. SETTING

Regional Setting

The project is located in the Big Sulphur Creek watershed, in the Mayacamas Mountains. The watershed drains the western slopes of the Mayacamas, and discharges to the Russian River. A vast majority of the watershed is privately owned. Land uses in the watershed are dominated by grazing, very low density rural residences, private hunting, and electricity production at the Geysers geothermal resource area, the largest complex of geothermal power plants in the world. Major vegetation communities in the watershed include grassland, oak woodland, and oak/bay woodland, as well as chaparral and pine forest at the upper elevations (CDFG, 2006).

The watershed exhibits climatic conditions typical of the California Coast Ranges, with hot, dry summers and wet winters. Air temperatures can exceed 100 degrees F in the summer and drop below 32 degrees F in the winter (Harding Lawson Associates, 1990). Elevations range from about 299 feet at the mouth of the creek to 4,498 feet at the headwaters.

The project is located along the canyon floor of Big Sulphur Creek, at a bend in the road and creek. Parcels immediately adjacent to the bridge are privately owned. The land use is undeveloped, with a rural residence approximately 2,000 feet to the south. Calpine's Aidlin geothermal power plant is located approximately 0.7 miles to the north.

Physical Site Conditions

The project is located in the Mayacamas Mountains, within the canyon of Big Sulphur Creek. In general, the Big Sulphur Creek canyon is narrow and steep, occasionally broadening into shallow valleys. The topography in the general vicinity of the BSA is characterized by steep, rugged slopes and ridges up to 2900 feet in elevation. The elevation of the bridge is 879 feet above sea level. Approaching the bridge on Geysers Road from the Cloverdale (west) direction, the topography of the BSA consists of steep road cut

and slopes to the left of the road, and the creek channel with its wide gravel bar to the right of the road. On the east end of the bridge, the canyon narrows in the upstream direction as the road takes a sharp left-hand turn and runs adjacent to the creek channel on a road cut for several hundred feet. The steep slopes of the canyon wall line the road on the right (south). The opposite (north) bank of the creek is also steep, near vertical in some places, and is being impacted by slope failure, likely due to unstable soils, steep banks, and cutting by the creek.

Soils at the a majority of the project site are mapped as Laughlin-Yorkville Complex, with 30 to 75 percent slopes, according to the Natural Resources Conservation Service. Laughlin soils are well-drained loams and sandy clay loam derived from weathered sedimentary rock. Yorkville soils are moderately well-drained clay loam derived from weathered igneous and metamorphic rock. The Laughlin-Yorkville Complex is composed of 60% Laughlin soils and 25% Yorkville soils. Soils in the area are highly erosive. The western project limit is mapped as Yorkville clay loam, 5-30% slopes. Alluvial materials (gravels) are present in the creek channel.

The geology of the site consists of greywacke and mélangé from the Cretaceous and Jurassic period, as well as Quaternary landslide deposits (southwest of the bridge) (Blake, et al, 2002). The area is susceptible to landslides and is seismically active, with the Maacama fault and several other smaller faults within 4 miles of the project.

The project is located in the Big Sulphur Creek watershed, and crosses Big Sulphur Creek. Big Sulphur Creek and its tributaries drain an area of approximately 85 square miles (CDFG, 2006). Big Sulphur Creek is a perennial stream that enters the Russian River approximately seven miles west of the project site. The average monthly discharge on Big Sulphur Creek varies seasonally, with an average discharge of 1.2 cubic feet per second (cfs) in September to 131 cfs in February (at the USGS gauge at Geysers Resort – USGS 11463170).

Figure 1: Location Map

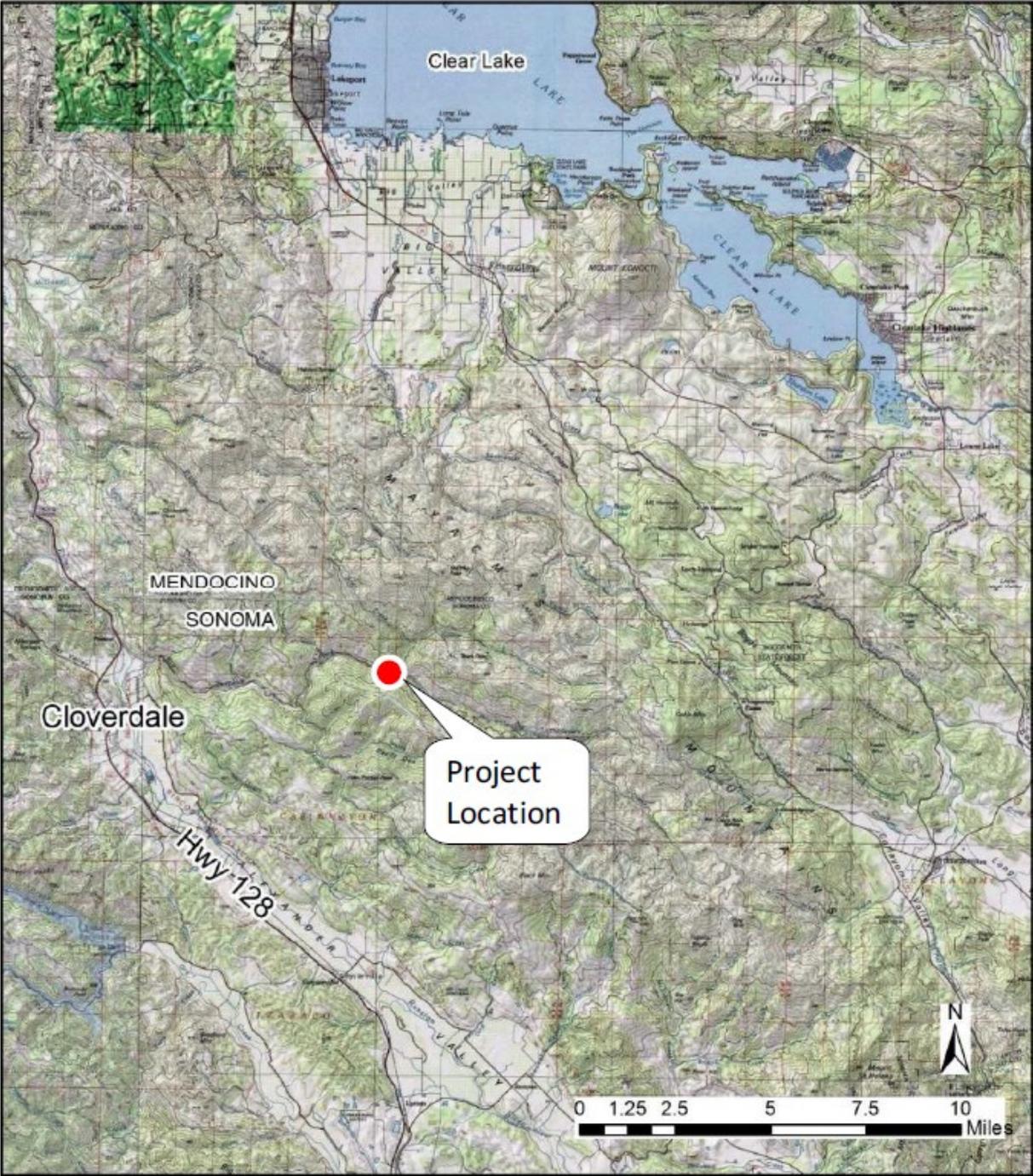
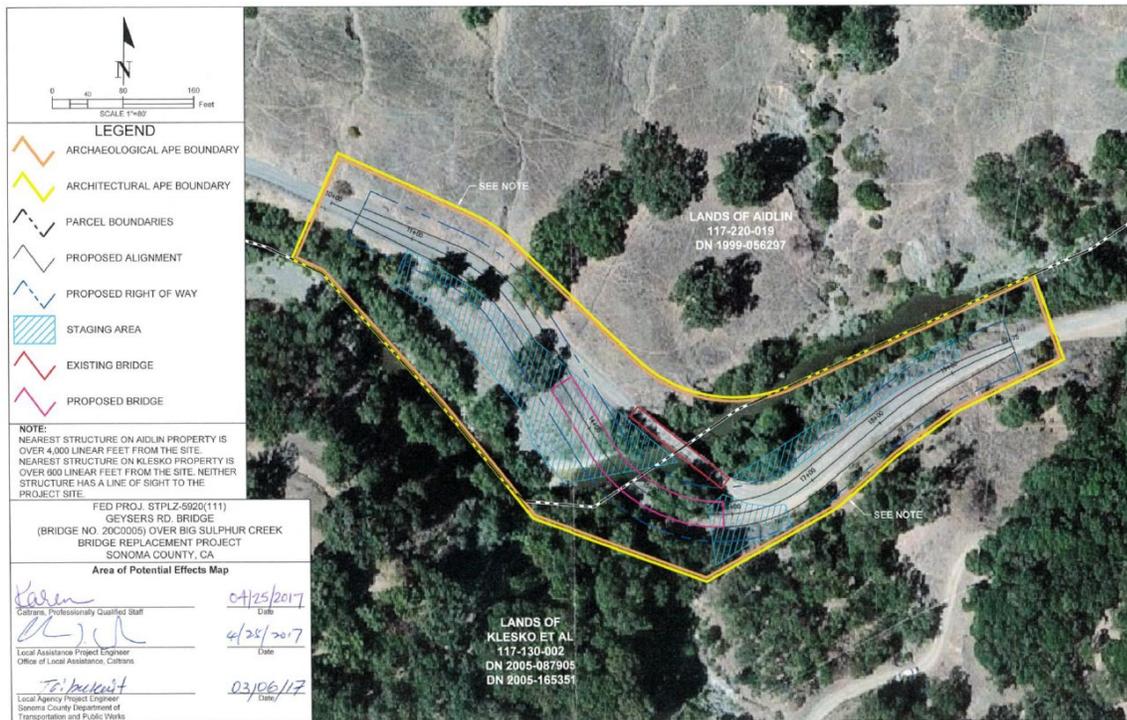


Figure 2: Project Impact Area



V. ISSUES RAISED BY THE PUBLIC OR AGENCIES

A referral packet was drafted and circulated to inform and solicit comments from selected relevant local, state and federal agencies; and to special interest groups that were anticipated to take interest in the project.

No issues have been raised.

VI. OTHER RELATED PROJECTS

Geysers Road Bridge over Frasier Creek is located about 3 miles from the project location. The existing bridge is a one lane bridge over Frasier Creek that does not meet current seismic standards. The bridge will be replaced with a two lane bridge on the existing alignment.

VII. EVALUATION OF ENVIRONMENTAL IMPACTS

This section analyzes the potential environmental impacts of this project based on the criteria set forth in the State CEQA Guidelines and the County's implementing ordinances and guidelines. For each item, one of four responses is given:

No Impact: The project would not have the impact described. The project may have a beneficial effect, but there is no potential for the project to create or add increment to the impact described.

Less Than Significant Impact: The project would have the impact described, but the impact would not be significant. Mitigation is not required, although the project applicant may choose to modify the project to avoid the impacts.

Potentially Significant Unless Mitigated: The project would have the impact described, and the impact could be significant. One or more mitigation measures have been identified that will reduce the impact to a less than significant level.

Potentially Significant Impact: The project would have the impact described, and the impact could be significant. The impact cannot be reduced to less than significant by incorporating mitigation measures. An environmental impact report must be prepared for this project.

Each question was answered by evaluating the project as proposed, that is, without considering the effect of any added mitigation measures. The Initial Study includes a discussion of the potential impacts and identifies mitigation measures to substantially reduce those impacts to a level of insignificance where feasible. All references and sources used in this Initial Study are listed in the Reference section at the end of this report and are incorporated herein by reference.

The Sonoma County Department of Transportation and Public Works has agreed to accept all mitigation measures listed in this Initial Study as conditions of approval for the proposed project, and to obtain all necessary permits, notify all contractors, agents and employees involved in project implementation and any new owners should the property be transferred to ensure compliance with the mitigation measures.

1. AESTHETICS:

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

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

Comment:

The PRMD Visual Assessment (VA) Guidelines have been applied to the visual characteristics of the proposed bridge replacement project. While the analysis of visual impacts involves qualitative judgments, this procedure is intended to define a methodology that utilizes, to the extent practicable, objective standards that can be described and utilized in a consistent manner. Project impacts have been analyzed by considering public viewing points. Public viewing points include public roads, public trails, and public parks. Viewing points from private properties are not used when applying the VA Guidelines.

Viewer sensitivity is defined both as the viewers' concern for scenic quality and the viewers' response to change in the visual resources that make up the view. Local values and goals may confer visual significance on landscape components and areas that would otherwise appear unexceptional in a visual resource analysis. Even when the existing appearance of a project site is uninspiring, a community may still object to projects that fall short of its visual goals.

The project is not likely to be controversial with the community as a whole. The project is located in a remote part of the County that is rural in nature, as there are very few residents in the area, and the roadway has very low traffic volumes (83 vehicles per day) resulting in relatively few viewers. Geysers Road is primarily used by private power corporations within the Geysers geothermal fields.

The existing structure was determined eligible for the National Register and is a Sonoma County Landmark part of the County's Historic District (HD) zoning. Public outreach was completed through the projects Section 106 of the National Historic Preservation Act documentation requirements. Through this process the project as currently proposed was determined to have a Finding of No Adverse Effect on cultural resources. The finding has received concurrence from local historically groups and the State Historic Preservation Officer (SHPO). Therefore, impacts to viewer sensitivity would be less than significant.

Viewer exposure is typically assessed by measuring the number of viewers exposed to the resource change, type of viewer activity, duration of their view, speed at which the viewer moves, and position of the viewer. High viewer exposure heightens the importance of early consideration of design, art, and architecture and their roles in managing the visual resource effects of a project.

There are no parks or trails from which the bridge can be viewed, and based on a site survey as well as review of topography and aeriels, the bridge cannot be viewed from any residences, with the closest residence being more than a quarter-mile away with intervening ridges obstructing views of the site. Exposure is low as daily use of Geysers Road is low with an average daily traffic count at 83 vehicles per day (Sonoma County, 2018). The roadway is primarily used by power plant staff coming from Highway 101 in Sonoma County. Viewers familiar with the roadway as it is now would likely have a low sensitivity to changes that result from modifications to its setting.

Visual impacts are determined by assessing changes to the visual resources and predicting viewer response to those changes. As described in the above sections, changes to the existing project corridor will be minimized to the extent possible. The combination of a limited viewshed, a design that is compatible with the existing visual character and only temporary impacts to visual quality results in the visual impacts determined to be moderately low. These impacts include the new structure, new asphalt at the approaches, and bank stabilization to protect the new structure. Over time these new elements will blend in with the existing roadway.

Permanent Impacts

The new bridge will be downstream (south of the existing bridge). This structure will be wider than the existing bridge to meet current AASHTO safety standards. The project will soften a near 90 degree turn that currently limits sight distance on the easterly bridge approach. The new alignment will result in the opening the viewshed of both the new and historic bridge to travelers. The new alignment roadway and bridge structure will be a permanent impact, resulting in a low to moderate resource change. Overall, this impact would be beneficial because it will allow motorists to more easily see their surroundings, the historic bridge, and on-coming traffic.

Temporary Impacts

Temporary visual impacts will be high during the construction due to the presence of large equipment and removal of vegetation within the new alignment. The equipment staging will occur at the project site in an existing turn out and wide spots in the shoulder. Construction signage will notify travels of the roadwork. Disturbed areas will be regraded to meet pre-project grades at the end of construction. These areas will be revegetated and monitored to ensure the success of the replacement plantings. (1, 29)

Significance Level:

Less than Significant with Mitigation Incorporated

The County will or has incorporated the following measures to avoid or minimize visual impacts:

- Minimize vegetation removal to the extent possible, and trim trees rather than remove where possible. Replace any vegetation removed for construction activities. Native species will be replaced in kind and any invasive plants within the project area will be removed and replaced with native.
- Protect existing vegetation to remain, which is outside of clearing and grubbing limits, from the contractors operations, equipment and materials storage. Environmentally Sensitive Areas (ESA) are identified on the project plans to limit contractor action areas.

- Screen Construction staging and storage areas where feasible. Place unsightly material, equipment storage and staging so that they are not visible to the maximum extent possible.

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

Comment:

Geysers Road is not a designated state scenic highway. The existing bridge is a Sonoma County Historic Landmark, which will remain in place post construction. The project will include minor maintenance to the historic structure, as well as funding set aside to ensure the structure is maintained in perpetuity. Proposed maintenance would be completed in order to stabilize the bridge but no changes to the truss components are proposed. The proposed undertaking would not affect the design integrity of this bridge. The alignment chosen will not affect heritage trees, unique geological features or any other historic buildings within a state scenic highway. (1, 30)

Significance Level:

Less than Significant Impact

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

Comment:

The project is located within a non-urbanized area. The project is located along the canyon floor of Big Sulphur Creek, at a bend in the road and creek. Parcels immediately adjacent to the bridge are privately owned. The land use is undeveloped, with a rural residence approximately 2,000 feet to the south. The current viewshed within the project area is extremely limited, due to the winding nature of the roadway, lack of other roads or publicly-accessible land uses in the immediate vicinity, and intervening topography and trees. Existing views of the bridge occur from Geysers Road and are primarily of the thru-truss and bridge deck. The approach roadway provides the viewer with the most visual change, as the new bridge would have a more modern appearance. As users travel along Geysers road, several concrete creek crossing exist. Construction of the proposed project would not substantially change the viewshed or the visual character or quality of public views of the site and its surrounds within the corridor. (1, 30)

Significance Level:

Less than Significant Impact

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

Comment:

No new structures will introduce new sources of light and glare. Geysers Road and the immediate vicinity of the project site do not contain any street lighting or residential lighting. The only existing source of nighttime lighting in the immediate vicinity of the project site is from motor vehicle headlights. Guardrail reflectors are provided at each approach of the existing bridge. With the exception of motor vehicle windshields and to a lesser extent water in Big Sulphur Creek, there are no existing sources of glare in the project area.

No new lighting is proposed for the replacement bridge or Geysers Road as a part of the project. The new bridge would include new guardrail reflectors at each approach but it would not increase the motor vehicle carrying capacity compared to the existing bridge. The replacement bridge would not include new sources of substantial glare. (1)

Significance Level:

No Impact

2. AGRICULTURE AND FOREST RESOURCES:

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

Comment:

There is no farmland present within the project's boundaries and the project would not convert any farmland to non-agricultural use. Surrounding areas are mapped as "Grazing Land" on the Sonoma County Important Farmland Map. There are no Prime, Unique, Statewide or Locally Important farmlands in the area. Therefore, no impacts would occur with implementation of the project. (1, 2)

Significance Level:

No Impact

- b) **Conflict with existing zoning for agricultural use, or Williamson Act Contract?**

Comment:

The project site is in a resource and rural development zoning district, which allows agriculture (wine growing and production), geothermal development, and manufacturing, and is not included in a Williamson Act contract. (1, 2)

Significance Level:

No Impact

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

Comment:

The project site is zoned "Resources and Rural Development." The project would not conflict with the existing zoning of the site or necessitate rezoning of the site. The proposed project is an allowable use under its current zoning of timberland production. Therefore, no impact would occur with implementation of the project. (1, 12)

Significance Level:

No Impact

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

Comment:

The proposed project will not result in the loss of forest land nor will it convert forest land to non – forest use. Individual trees removed would be replaced via mitigation plantings. (1)

Significance Level:

No Impact

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

Comment:

The project does not involve other changes in the environment that could result in conversion of farmland to non-agricultural use or forest land to non-forest use. (1,2)

Significance Level:

No Impact

3. 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?

Comment:

The project is within the jurisdiction of the Northern Sonoma County Air Pollution Control District (NSCAPCD). The NSCAPCD does not have an adopted air quality plan because it is in attainment for all federal and state criteria pollutants. (1, 5)

Significance Level:

No Impact

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

Comment:

The project is located in the NSCAPCD jurisdiction, a region that is in attainment for criteria pollutants under applicable state and federal ambient air quality standards, however, PM₁₀ is a criteria pollutant that is closely monitored in the NSCAPCD. Readings in the district have exceeded state standards on several occasions in the last few years. The high PM₁₀ readings occurred in the winter and are attributed to the seasonal use of wood burning stoves. The project will have no long-term effect on PM₁₀, because all surfaces will be paved, gravel, landscaped or otherwise treated to stabilize bare soils, and operational dust generation will be insignificant. However, there could be a significant short-term emission of dust (which would include PM_{2.5} and PM₁₀) during construction. While these emissions could be significant at the project level, site BMPs and mitigation measures for controlling dust will lower construction related airborne particulates to a less than significant amount. (1, 5)

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation:

This potentially significant impact can be reduced to a less-than-significant level by implementing the following mitigation measure during construction:

Mitigation Measure AIR-1 Air Quality/ Fugitive Dust Control.

The County shall include provisions in the construction bid documents that the contractor shall implement a dust control program to limit fugitive dust emissions. The dust control program shall include, but not be limited to, the following elements, as appropriate:

- Water inactive construction sites and exposed stockpile sites at least twice daily, including during non-work days, or until soils are stable.
- Pursuant to the California Vehicle Code (State of California 2009), all trucks hauling soil and other loose material to and from the construction site shall be covered or shall maintain at least 6 in. of freeboard (i.e., minimum vertical distance between top of load and the trailer).
- Any topsoil that is removed for the construction operation shall be stored on-site in piles not to exceed 4 ft. in height to allow development of microorganisms prior to resoiling of the construction area. These topsoil piles shall be clearly marked and flagged. Topsoil piles that will not be immediately returned to use shall be revegetated with a non-persistent erosion control mixture.
- Soil piles for backfill shall be marked and flagged separately from native topsoil stockpiles. These soil piles shall also be surrounded by silt fencing, straw wattles, or other sediment barriers or covered unless they are to be immediately used.
- Equipment or manual watering shall be conducted on all stockpiles, dirt/ gravel roads, and exposed or disturbed soil surfaces, as necessary, to reduce airborne dust.

c) Expose sensitive receptors to substantial pollutant concentrations?Comment:

Sensitive receptors include hospitals, schools, convalescent facilities, and residential areas. State the type and location of the nearest sensitive receptor. No such receptors are located near the proposed project site. (1)

Significance Level:

No Impact

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

Construction equipment may generate odors during project construction. The impact would be less than significant as it would affect a very low number of people due to the rural setting and would be a short-term impact that ceases upon completion of the project.(1)

Significance Level:

Less than Significant Impact

4. BIOLOGICAL RESOURCES:

The Geysers Road Bridge over Big Sulphur Creek Project has a long history and has been surveyed for biotic resources several times by County Environmental Specialist staff. General site surveys have been conducted by Richard Stabler and Jackson Ford, Senior Environmental Specialists with the Sonoma County Permit and Resource Management Department (PRMD) Natural Resources Division. Richard Stabler has a Master of Science Degree in Biology with an emphasis on plant ecology at Sonoma State University and has 20 years of experience performing wildlife, plant, and wetland surveys for the County. Jackson Ford has a Master of Science in Environmental Policy and Planning from California State Polytechnic University, Pomona and has 5 years of experience performing wildlife surveys for construction projects. Previous site visits conducted by PRMD and resource agency staff are described below.

- May 11, 2018: Richard Stabler, Deborah Waller and Jackson Ford
- April 13 and 18, 2018: PRMD Sr. Environmental Specialists Richard Stabler and Jackson Ford
- November 13, 2015: Richard Stabler and Mary Nicholl
- June 26, 2014: Richard Stabler and Laura Peltz

Additionally, County biologists coordinated an agency meeting on February 15, 2018. Representatives from California Department of Fish and Wildlife, North Coast Regional Water Quality Control Board, National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries), and the U.S. Department of Army Corps of Engineers. The purpose of this meeting was to review recent project design elements and construction methods in efforts to identify site impacts and potential avoidance, minimizations and mitigations for environmental impacts. The information was then used to develop a project Natural Environment Study (NES) in effort to satisfy requirements of the National

Environmental Policy Act (NEPA). The report was submitted to Caltrans Local Assistance who represents the Federal Highway Administration (FHWA), the NEPA lead agency for the project. The NES was approved on December 18, 2019.

A project Biological Assessment was written, and Caltrans staff submitted to NOAA Fisheries to initiate Section 7 consultation of the Federal Endangered Species Act consultation. NOAA Fisheries issued a project Biological Opinion on May 22, 2020 to cover the potential impacts FESA listed fish species.

The following analysis has been summarized from the project's NES and BA/BO documentation.

Regulatory Framework

The following discussion identifies federal, state and local environmental regulations that serve to protect sensitive biological resources relevant to the California Environmental Quality Act (CEQA) review process.

Federal

Federal Endangered Species Act (FESA)

FESA establishes a broad public and federal interest in identifying, protecting, and providing for the recovery of threatened or endangered species. The Secretary of Interior and the Secretary of Commerce are designated in FESA as responsible for identifying endangered and threatened species and their designated critical habitat, carrying out programs for the conservation of these species, and rendering opinions regarding the impact of proposed federal actions on listed species. The USFWS and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) are charged with implementing and enforcing the FESA. USFWS has authority over terrestrial and continental aquatic species, and NOAA Fisheries has authority over species that spend all or part of their life cycle at sea, such as salmonids.

Section 9 of FESA prohibits the unlawful "take" of any listed fish or wildlife species. Take, as defined by FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such action." USFWS's regulations define harm to mean "an act which actually kills or injures wildlife." Such an act "may include "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR § 17.3). Take can be permitted under FESA pursuant to sections 7 and 10. Section 7 provides a process for take permits for federal projects or projects subject to a federal permit, and Section 10 provides a process for incidental take permits for projects without a federal nexus. FESA does not extend the take prohibition to federally listed plants on private land, other than prohibiting the removal, damage, or destruction of such species in violation of state law.

The Migratory Bird Treaty Act of 1918 (MBTA)

The U.S. MBTA (16 USC §§ 703 et seq., Title 50 Code of Federal Regulations [CFR] Part 10) states it is "unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill; attempt to take, capture or kill; possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export any migratory bird, any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or in part, of any such bird or any part, nest or egg thereof..." In short, under MBTA it is illegal to disturb a nest that is in active use, since this could result in killing a bird, destroying a nest, or destroying an egg. The USFWS enforces MBTA. The MBTA does not protect some birds that are non-native or human-introduced or that belong to families that are not covered by any of the conventions implemented by MBTA. In 2017, the USFWS issued a memorandum stating that the MBTA does not prohibit incidental take; therefore, the MBTA is currently limited to purposeful actions, such as directly and knowingly removing a nest to construct a project, hunting, and poaching.

The Clean Water Act (CWA)

The CWA is the primary federal law regulating water quality. The implementation of the CWA is the responsibility of the U.S. Environmental Protection Agency (EPA). However, the EPA depends on other agencies, such as the individual states and the U.S. Army Corps of Engineers (USACE), to assist in implementing the CWA. The objective of the CWA is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” Section 404 and 401 of the CWA apply to activities that would impact waters of the U.S. The USACE enforces Section 404 of the CWA and the California State Water Resources Control Board enforces Section 401.

Section 404

As part of its mandate under Section 404 of the CWA, the EPA regulates the discharge of dredged or fill material into “waters of the U.S.”. “Waters of the U.S. include territorial seas, tidal waters, and non-tidal waters in addition to wetlands and drainages that support wetland vegetation, exhibit ponding or scouring, show obvious signs of channeling, or have discernible banks and high-water marks. Wetlands are defined as those areas “that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3(b)). The discharge of dredged or fill material into waters of the U.S. is prohibited under the CWA except when it is in compliance with Section 404 of the CWA. Enforcement authority for Section 404 was given to the USACE, which it accomplishes under its regulatory branch. The EPA has veto authority over the USACE’s administration of the Section 404 program and may override a USACE decision with respect to permitting. Substantial impacts to waters of the U.S. may require an Individual Permit’s Projects that only minimally affect waters of the U.S. may meet the conditions of one of the existing Nationwide Permits, provided that such permit’s other respective conditions are satisfied. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions (see below).

Section 401

Any applicant for a federal permit to impact waters of the U.S. under Section 404 of the CWA, including Nationwide Permits where pre-construction notification is required, must also provide to the USACE a certification or waiver from the State of California. The “401 Certification” is provided by the State Water Resources Control Board through the local Regional Water Quality Control Board (RWQCB). The RWQCB issues and enforces permits for discharge of treated water, landfills, storm-water runoff, filling of any surface waters or wetlands, dredging, agricultural activities and wastewater recycling. The RWQCB recommends the “401 Certification” application be made at the same time that any applications are provided to other agencies, such as the USACE, USFWS, or NOAA Fisheries. The application is not final until completion of environmental review under the CEQA. The application to the RWQCB is similar to the pre-construction notification that is required by the USACE. It must include a description of the habitat that is being impacted, a description of how the impact is proposed to be minimized and proposed mitigation measures with goals, schedules, and performance standards. Mitigation must include a replacement of functions and values, and replacement of wetland at a minimum ratio of 2:1, or twice as many acres of wetlands provided as are removed. The RWQCB looks for mitigation that is on site and in-kind, with functions and values as good as or better than the water-based habitat that is being removed.

State

California Endangered Species Act (CESA)

Provisions of CESA protect state-listed threatened and endangered species. The CDFW is charged with establishing a list of endangered and threatened species. CDFW regulates activities that may result in “take” of individuals (i.e., “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”). Habitat degradation or modification is not expressly included in the definition of “take” under the California Fish and Game Code (CFGC), but CDFW has interpreted “take” to include the killing of a member of a species which is the proximate result of habitat modification.

Fish and Game Code 1600-1602

Sections 1600-1607 of the CFGC require that a Notification of Lake or Streambed Alteration Agreement (LSAA) application be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW reviews the proposed actions in the application and, if necessary, prepares a LSAA that includes measures to protect affected fish and wildlife resources, including mitigation for impacts to bats and bat habitat.

Nesting Birds

Nesting birds, including raptors, are protected under CFGC Section 3503, which reads, "It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." In addition, under CFGC Section 3503.5, "it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto". Passerines and non-passerine land birds are further protected under CFGC 3513. As such, CDFW typically recommends surveys for nesting birds that could potentially be directly (e.g., actual removal of trees/vegetation) or indirectly (e.g., noise disturbance) impacted by project-related activities. Disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by CDFW.

Non-Game Mammals

Sections 4150-4155 of the CFGC protects non-game mammals, including bats. Section 4150 states "A mammal occurring naturally in California that is not a game mammal, fully protected mammal, or fur-bearing mammal is a nongame mammal. A non-game mammal may not be taken or possessed except as provided in this code or in accordance with regulations adopted by the commission". The non-game mammals that may be taken or possessed are primarily those that cause crop or property damage. Bats are classified as a non-game mammal and are protected under the CFGC.

California Fully Protected Species and Species of Special Concern

The classification of "fully protected" was the CDFW's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The Fish and Game Code sections (fish at §5515, amphibians and reptiles at §5050, birds at §3503 and §3511, and mammals at §4150 and §4700) dealing with "fully protected" species state that these species "...may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species," although take may be authorized for necessary scientific research. This language makes the "fully protected" designation the strongest and most restrictive regarding the "take" of these species. In 2003, the code sections dealing with "fully protected" species were amended to allow the CDFW to authorize take resulting from recovery activities for state-listed species.

California Species of Special Concern (CSC) are broadly defined as animals not listed under the FESA or CESA, but which are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing or because they historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by the CDFW, land managers, consulting biologists, and others, and is intended to focus attention on the species to help avert the need for costly listing under FESA and CESA and cumbersome recovery efforts that might ultimately be required. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them. Although these species generally have no special legal status, they are given special consideration under the CEQA during project review.

Porter-Cologne Water Quality Control Act

The intent of the Porter-Cologne Water Quality Control Act (Porter-Cologne) is to protect water quality and the beneficial uses of water, and it applies to both surface and ground water. Under this law, the State Water Resources Control Board develops statewide water quality plans, and the RWQCBs develop basin plans that identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of both statewide and basin plans. Waters regulated under Porter-Cologne, referred to as “waters of the State,” include isolated waters that are not regulated by the USACE. Projects that require a USACE permit, or fall under other federal jurisdiction, and have the potential to impact waters of the State are required to comply with the terms of the Water Quality Certification Program. If a proposed project does not require a federal license or permit, any person discharging, or proposing to discharge, waste (e.g., dirt) to waters of the State must file a Report of Waste Discharge and receive either waste discharge requirements (WDRs) or a waiver to WDRs before beginning the discharge.

Local

Sonoma County General Plan

The *Sonoma County General Plan 2020* Land Use Element and Open Space & Resource Conservation Element both contain policies to protect natural resource lands including, but not limited to, watershed, fish and wildlife habitat, biotic areas, and habitat connectivity corridors.

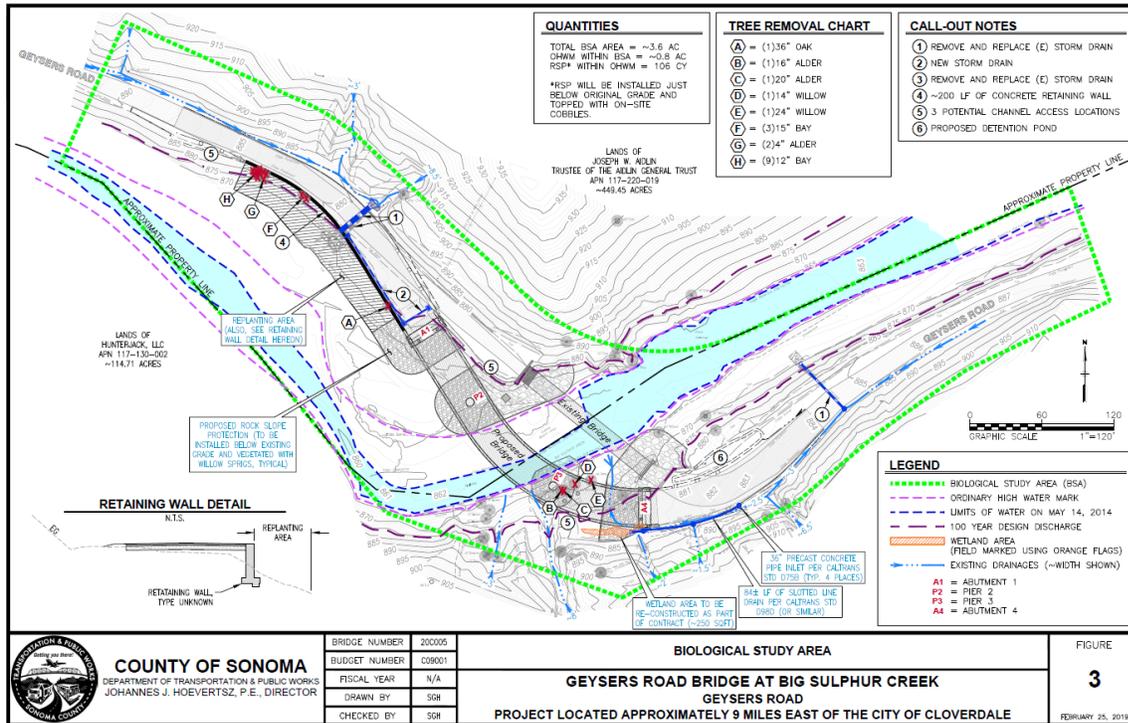
Riparian Corridor Ordinance

The RC combining zone is established to protect biotic resource communities, including critical habitat areas within and along riparian corridors, for their habitat and environmental value, and to implement the provisions of the General Plan Open Space and Resource Conservation and Water Resources Elements. These provisions are intended to protect and enhance riparian corridors and functions along designated streams, balancing the need for agricultural production, urban development, timber and mining operations and other land uses with the preservation of riparian vegetation, protection of water resources, floodplain management, wildlife habitat and movement, stream shade, fisheries, water quality, channel stability, groundwater recharge, opportunities for recreation, education and aesthetic appreciation and other riparian functions and values.

Environmental Setting

The Biological Study Area was defined to include the project footprint, including the existing right-of-way, proposed right of-way, temporary construction easements, and temporary staging areas. In addition, the BSA includes the riparian corridor and stream channel 100 feet upstream and downstream of the project limits, in order to consider indirect impacts and adjacent habitat from which species might migrate into the project site. In total the project BSA encompasses approximately 3.6 acres. Potential impacts to salmonids were evaluated on a watershed basis rather than within a discrete BSA.

Figure 3: Biological Study Area and Project Impact Area



Plant Communities and Habitat Types in the BSA

The following natural communities are found at and surrounding the site:

Riparian forest

A narrow but well-established band of riparian forest lines the channel of Big Sulphur Creek at the project site. It is continuous on both banks upstream of the bridge, and on the south bank downstream of the bridge. There is a gap in the canopy on the north bank downstream of the bridge in an area of open gravel bar subject to high flows during large storm events. The dominant tree species in the riparian forest community are willows and white alder. The dominant understory plants include Himalayan blackberry and California grape.

Gravel bar

Downstream of the bridge on the north bank, there is a wide, long gravel bar consisting of gravel to cobble-sized rock. As stated above, the area, located on the inside curve of the creek, is subject to disturbance and deposition of materials, during high storm flows and lacks trees and shrubs. Herbs and grasses grow on the bar between storm events.

Annual grassland

The large slope to the north of the bridge, as well as the road embankment south of Geysers Road on the western bridge approach, contain annual grassland, dominated by non-native species. Scattered live oaks

are found within the grassland habitat. An unnamed ephemeral drainage (gully) lined with California buckeye and California bay runs through the annual grassland.

Oak/bay woodland

The north-facing slope south of the creek and west of the bridge, above the band of riparian forest, is a woodland dominated by oaks (primarily interior live oak and Valley Oak) and California bay. There are small seeps and drainages mixed within the woodland that are lined with big-leaf maple and an understory of California blackberry, California grape, and various species of ferns.

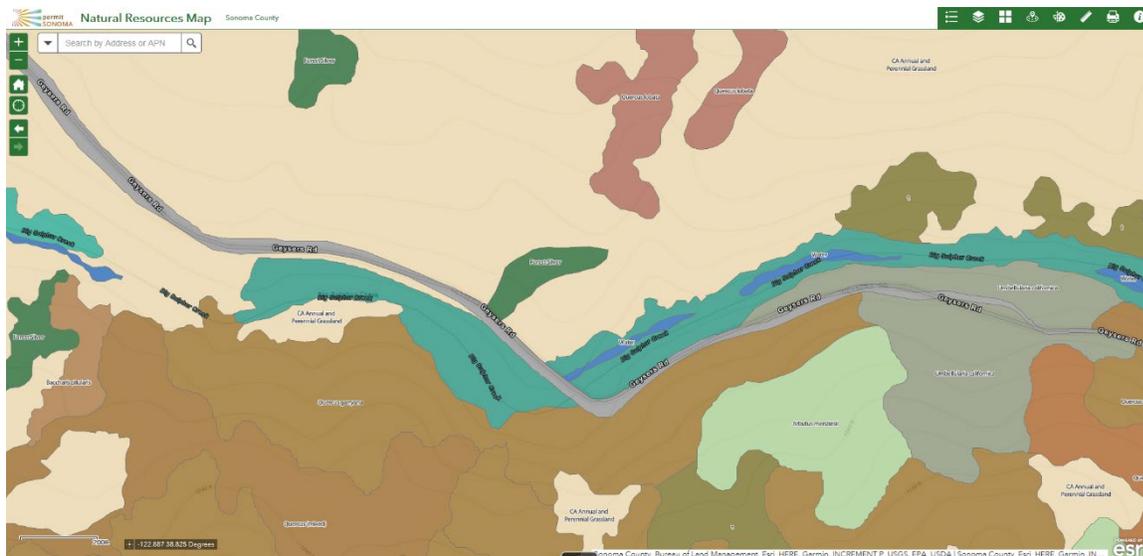
Oak woodland

The north-facing slope on the south side of the road east of the bridge is an oak woodland with the dominant trees and shrubs consisting of interior live oak, blue oak, madrone, and toyon. This area has shallow rocky soils that support a mix of native and nonnative grasses.

Riparian Scrub

Above the riparian vegetation and below the road at the east end of the bridge is a narrow band of scrub that is dominated by coyote brush and toyon. (1,31)

Figure 4: Natural Communities Map of the Project Area



Would the project:

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

Comment:

Regulatory Framework

The following discussion identifies federal, state and local environmental regulations that serve to protect sensitive biological resources relevant to the California Environmental Quality Act (CEQA) review process.

Special-Status Species

Special-status species include those plant and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed and proposed species. In addition, California Department of Fish and Wildlife (CDFW) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, U.S. Fish and Wildlife Service (The Service) Birds of Conservation Concern, and CDFW special-status invertebrates, are all considered special-status species. Although CDFW Species of Special Concern generally have no special legal status, they are given special consideration under the California Environmental Quality Act (CEQA). In addition to regulations for special-status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act of 1918. Plant species on California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants with California Rare Plant Ranks (Rank) of 1 and 2 are also considered special-status plant species and must be considered under CEQA. Bat species designated as "High Priority" by the Western Bat Working Group (WBWG) qualify for legal protection under Section 15380(d) of the CEQA Guidelines. Species designated "High Priority" are defined as "imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats.

Endangered Species Act

The Endangered Species Act (ESA) of 1973, as amended (16 USC 1531 *et seq.*) was enacted to provide a means to identify and protect endangered and threatened species. Under the Section 9 of the ESA, it is unlawful to take any listed species. "Take" is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting a listed species. "Harass" is defined as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. "Harm" is defined as an act which actually kills or injures fish or wildlife and may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering. Actions that may result in "take" of a federal-listed species are subject to The Service or National Marine Fisheries Service (NOAA Fisheries) permit issuance and monitoring. Section 7 of ESA requires federal agencies to ensure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat for such species. Any action authorized, funded, or carried out by a federal agency or designated proxy (e.g., Army Corps of Engineers) which has potential to affect listed species requires consultation with The Service or NOAA Fisheries under Section 7 of the ESA.

Critical Habitat

Critical habitat is a term defined in the ESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species

by the ESA jeopardy standard. However, areas that are currently unoccupied by the species but which are needed for the species' recovery are protected by the prohibition against adverse modification of critical habitat.

Essential Fish Habitat

Essential Fish Habitat (EFH) is regulated through the NMFS, a division of the National Oceanic and Atmospheric Administration (NOAA). Protection of Essential Fish Habitat is mandated through changes implemented in 1996 to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) to protect the loss of habitat necessary to maintain sustainable fisheries in the United States. The Magnuson-Stevens Act defines Essential Fish Habitat as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" [16 USC 1802(10)]. NMFS further defines essential fish habitat as areas that "contain habitat essential to the long-term survival and health of our nation's fisheries" Essential Fish Habitat can include the water column, certain bottom types such as sandy or rocky bottoms, vegetation such as eelgrass or kelp, or structurally complex coral or oyster reefs. Under regulatory guidelines issued by NMFS, any federal agency that authorizes, funds, or undertakes action that may affect EFH is required to consult with NMFS (50 CFR 600.920).

Discussion of Special Status Plants

A list of regionally occurring special-status plant species was compiled based on a review of pertinent literature, the results of the field surveys, and the review of the USFWS species list, and CNDDDB and CNPS database records. For each species, habitat requirements were assessed and compared to the habitats within the BSA and immediate vicinity in order to determine their potential to be affected by the proposed project. Based on this review of habitat requirements and the results of the field assessment, no special-status plant species were determined to have suitable habitat within the BSA.

Discussions of Special Status Animals

A list of regionally occurring special-status animal species was compiled based on a review of pertinent literature, the results of the field surveys, and the review of the USFWS species list, CNDDDB database records, and a query of the California Wildlife Habitat Relationships (CWHHR) system (California Department of Fish and Game 2008a). The CWHHR system was used to help determine wildlife species that potentially occur in the vegetation habitats within the BSA. The CWHHR is a predictive database system based on scientific information concerning wildlife species and their habitat relationships. Fish and invertebrates are not included in the CWHHR system.

For each species, general habitat requirements were assessed and compared to the habitats within the BSA and immediate vicinity in order to determine their potential to be affected by the proposed project. Based on this review of general habitat requirements presented in, and the results of the field assessment, nine special-status species were determined to have the potential to be present within the proposed project area.

These special-status animal species potentially affected by the project include: Central California Coast Coho salmon (*Oncorhynchus kisutch*), Central Coast California District Population Segment (DPS) steelhead (*Oncorhynchus mykiss irideus*) California coastal chinook salmon (*Oncorhynchus tshawytscha*), Central California giant Salamander (*Dicamptodon ensatus*), foothill yellow legged frog (*Rana boylei*), red bellied newt (*Taricha rivularis*), western pond turtle (*Actinemys marmorata*), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and western red bat (*Lasiurus blossevillii*). Potential impacts and recommended mitigation measures for the species listed above are addressed in this document.

Critical Habitat and Essential Fish Habitat

The project is within designated Essential Fish Habitat (EFH) for central coastal chinook salmon and central California Coast coho salmon. The Magnuson-Stevens Act requires consultation for all federal

agency actions that may adversely affect EFH. EFH consultation with NOAA FISHERIES is required by federal agencies undertaking, permitting, or funding activities that may adversely affect EFH. Because localized short-term impacts to designated critical habitat, the County determined the project may have an effect to EFH. Conservation measures to avoid, minimize, mitigate, or otherwise offset adverse effects to EFH have been included in the project design to reduce these impacts to negligible and temporary. A Biological Assessment/Essential Fish Habitat Assessment (BA/EFHA) was submitted to the NOAA Fisheries for review under Section 7 of the Endangered Species Act (ESA) to address potential impacts to EFH. NOAA Fisheries issued a Biological Opinion on May 22, 2020, stating that with the conservation measures proposed, the project would not adversely affect EFH. Mitigation measures BIO-1 (erosion and sediment control), BIO-2 (accidental spills), BIO-3 (riparian habitat), BIO-4 (invasive species) and BIO-5 (salmonids) will be incorporated into the project to minimize potential effects on federally listed species and biological resources, including critical habitat and EFH.

Central California Coast ESU Coho

Central California Coast Coho (also sometimes called silver salmon) are anadromous, salmonids that have historically been distributed throughout the north Pacific coastal waters. Coho spend 1-2 years in their natal streams before moving downstream to sea, and return after spending 1-2 years in the ocean. The spawning migrations begin in the late-fall or winter after heavy rains have occurred, and generally peak between December and January. Spawning nests (or redds) are generally in the heads of riffles or pools, with loose, coarse gravel, and nearby cover. Both males and females die after spawning, although females may guard their nests from predators for up to two weeks.

The listed range of the Central California coast coho salmon ESU includes the Russian River watershed, which includes Big Sulphur Creek. There have been no reported occurrences of coho in Big Sulphur Creek (Bob Coey, NOAA Fisheries Biologist, personal communication, CDFW 2006). Coho salmon have not been detected on Big Sulphur Creek during site surveys. The reach within the project action area is designated critical habitat and there are no substantial barriers to upstream mitigation from The Russian River and therefore take may be possible but highly unlikely.

Central California Coast DPS Steelhead

The Central California Coast Steelhead Distinct Population Segment was federally listed as threatened in 1997, with the threatened status reaffirmed on January 5, 2006. The DPS includes all naturally spawned populations of steelhead in California streams from the Russian River to Aptos Creek, and the drainages of San Francisco, San Pablo and Suisun Bays eastward to Chipps Island. Steelhead are not State listed on Big Sulphur Creek.

Steelhead are anadromous rainbow trout. The steelhead on Russian River and its tributaries are "winter-run," meaning that fish return to their freshwater spawning grounds from late fall to April (NMFS 2001). Some steelhead survive to return to the ocean then spawn again in subsequent years. Steelhead construct nests called redds in spawning gravel, generally prefer gravel sized 0.5 to 6 inches dominated by 2- to 3-inch gravel (Flosi, et al 1998), and need gravel that is free from excessive sediment that can smother eggs. Egg development is temperature dependent, varying from about 19 days at 60 degrees F to about 80 days at 42 degrees F (NMFS 2001). Steelhead hatch as "alevins" (a larval life stage dependent on food stored in a yolk sac), and emerge from the gravel as "fry." In their first summer, fry generally rear in shallow habitats such as pool tailouts, shallow riffles, and edgewater habitats. In winter, they are often found under large boulders in shallow riffles and quiet backwater and edge areas. (Flosi, et al 1998) Cover in the form of boulders, root wads and woody debris provides important summer and winter habitat. Later as they grow, juveniles move into the deeper water of riffles and pools. Steelhead prefer rearing water temperatures between 53 to 58 degrees F, and have an upper lethal limit around 75 degrees F (NMFS 2001). Pools provide a cool water refuge for higher summer temperatures. Juvenile steelhead remain in fresh water 1-3 years, migrate to the ocean as "smolts" (typically between March and June) and then spend 2-3 years in the ocean before returning to spawn in their natal stream.

The habitat in the BSA may support multiple steelhead life stages, though only juvenile steelhead were have been observed during the site surveys. The BSA is known to serve as a migratory corridor for steelhead traveling to spawning grounds in the upper watershed. Juvenile steelhead have been present during several of the site visits, though other suitable habitat such as large boulders, aquatic vegetation, and large woody debris are generally lacking.

Juvenile steelhead were observed within the project limits during site visits and adult steelhead may be present at the site during the spawning season of late fall to April. Young steelhead may be present at any time of year.

California Coast ESU Chinook

The California coastal chinook are anadromous, semelparous, and are the largest of the Pacific salmon species. Chinook salmon prefer rivers with deep, cold, fast-moving water, and gravel substrates. During the freshwater portion of their life history, chinook does not feed. Both males and females die after spawning. After eggs are deposited, it takes 3-4 months for them to hatch.

California coastal chinook salmon are known to occur in the main stem of the Russian River, but are not known to use Big Sulphur Creek, which is higher in the watershed. In various surveys by CDFW from 1957-2000, chinook salmon have not been observed (CDFG 2006). Personal communication with Bob Coey of NOAA Fisheries stated that chinook salmon have not been detected in Big Sulphur Creek beyond the Highway 101 corridor, which is close to the confluence with the Russian River and approximately 8 miles downstream of the BSA. The reach within the project action area is designated critical habitat and there are no substantial barriers to upstream mitigation from The Russian River and therefore take may be possible but unlikely.

CC chinook have not been observed at the site. Personal communication with Bob Coey of NOAA Fisheries stated that chinook salmon have not been detected in Big Sulphur Creek beyond the Highway 101 corridor, which is close to the confluence with the Russian River.

Potential Impacts to Salmonids from the Project

There will likely be some direct impacts to steelhead due to the construction of the work pad which will require some work in the flowing water of the creek. A stream diversion system will be put into place to isolate the work area from flow of Big Sulphur Creek. The construction of the work pad could be lethal to some steelhead that might become trapped in the rock. Fish capture and relocation using block nets, seines, e-fishers, and buckets will be needed prior to the construction of the work pad. Impacts to fish would be to less than significant with the implementation of measures included in BIO-5- Mitigation for salmonids, listed below.

Removal of riparian vegetation in the temporary disturbance areas could potentially affect steelhead indirectly through loss of shade. However, this impact would be temporary with incorporation of mitigation measure BIO-3 (replacement of lost riparian habitat) will fully mitigate for any loss of riparian habitat. Additionally, the new bridge will actually increase shading to the creek, offsetting any temporary loss of shade from vegetation removal. Continuous riparian vegetation is also present upstream and downstream of the BSA to provide shade to any steelhead in the project area during construction. Increased turbidity within Big Sulphur Creek due to construction activities may also have an adverse effect on fish. However mitigation measure BIO-1 (erosion and sediment control) will ensure that disturbed areas are stabilized and appropriate erosion control measures (i.e., silt fencing) have been implemented during, as well as immediately following, construction to minimize and/or prevent erosion and sedimentation effects. Additional measures included in BIO-5 (salmonids) will ensure impacts to salmonids are less than significant.

California Giant Salamander

The California giant salamander (*Dicamptodon ensatus*) is a State species of special concern and

has no Federal status. California giant salamander are endemic to California, found from Mendocino County near Point Arena east into the coast ranges into Lake and Glenn counties and south to Sonoma and Marin Counties. There are other known populations south of San Francisco Bay from San Mateo to Santa Cruz Counties (CaliforniaHerps). They occur from sea level to 3,000 ft. Although no CA giant salamanders have been observed at the site, conditions at the site are consistent with habitat used by this species. The California Natural Diversity Database has recorded observations within 1.5 miles of the project limits.

Foothill Yellow Legged Frog

The foothill yellow-legged frog (FYLF) is a State species of special concern and has no Federal status. The Feather River and Northeast/Northern Sierra clades are listed as threatened; the East/Southern Sierra, West/Central Coast and Southwest/South Coast clades are listed as endangered. The only clade not listed under CESA is the North Coast Clade; this clade is not subject to CESA protections but is still a CDFW Species of Special Concern. FYLF is found in or near rocky streams in a variety of habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadows. Adults often bask on exposed rock surfaces near streams. When disturbed, they dive into the water and take refuge under submerged rocks or sediments. During periods of inactivity, especially during cold weather, individuals seek cover under rocks in the streams or on shore within a few meters of water. Unlike most other ranid frogs in California, this species is rarely encountered (even on rainy nights) far from permanent water.

In California, mating and egg-laying usually occur after the end of spring flooding and may commence anytime from mid-March to May, depending on local water conditions (CDFG 2008). Clusters of eggs are attached to the downstream side of submerged rocks. Tadpoles transform in about 15 weeks. Tadpoles require water for at least three or four months while completing their aquatic development. This frog has disappeared from much of its range in California (possibly up to 45 percent) (CaliforniaHerps 2018)

The rocky, low-flow channel of Big Sulphur Creek within the BSA provides suitable habitat for foothill yellow-legged frog. Biotic surveys within the project BSA found several Adult, juvenile, larvae and egg masses. There are multiple CNDDDB occurrences of foothill yellow-legged frog within and in adjacent areas of the project BSA.

Red Bellied Newt

The red bellied newt (*Taricha rivularis*) is a State species of special concern and has no Federal status. The red bellied newts have the most limited geographical distribution among the tree species of the genus *Taricha*. They occur in coastal California north of San Francisco Bay in Sonoma, Mendocino and Humboldt Counties, at elevations between 150-450m (amphibiaweb.org). Adult red bellied newts are 5 ½ - 7 ½ inches long in total length. They are considered medium sized salamander with grainy skin that is brownish black on top with a tomato red under belly.

Adults are terrestrial, becoming aquatic when breeding. Breeding migration begins as early as January with adult males entering waters as early as February. These adults will leave waters during heavy rain events returning to water after high flows recede. Typically breeding takes place from February to May, in clean rocky streams with moderate to fast flow. The females lay egg masses that are one layer thick with clutch size of about 10 eggs. Many egg masses can be found under a single rock. Temperatures determine the how long eggs take to hatch with known ranges of 16-34 days. The larvae stage last approximately 4-6 months with metamorphosis typically occurring in late summer and early fall.

Red bellied newts have been observed throughout the projects BSA. The site conditions are ideal for all life stages of red bellied newts.

Potential Impacts to Amphibians from the Project

The Project could adversely affect California giant salamander, foothill yellow-legged frogs, and red bellied newts if individuals were present in the Project area during construction. Potential direct effects include harassment, injury, and mortality of individuals due to equipment and vehicle traffic. The species may also be affected if construction activities result in degradation of aquatic habitat and water quality due to erosion and sedimentation, accidental fuel leaks, and spills. In addition, loss of riverine and riparian habitat may have a negative impact on this species.

The proposed project has the potential to result in adverse impacts on California giant salamander, foothill yellow-legged frogs and red bellied newts as identified below:

- Although unlikely, construction related impacts, especially in-channel work, could result in an adverse effect via direct loss (individual mortality) (e.g., due to operation of equipment in or adjacent to the creek channel when flowing or standing water is present). The potential for direct loss only occurs during project construction. Implementation of the avoidance and minimization measures will minimize the potential for direct take.
- Activities related to the construction of the new bridge and roadway approaches would result in some localized loss of vegetation and general disturbance to the soil. Removal of vegetation and soil can accelerate erosion processes in the BSA and increase the potential for sediment to enter Big Sulphur Creek. Excessive sedimentation into the stream channel has the potential to reduce habitat quality for these species (e.g. decreasing availability of potential food items including aquatic invertebrates). Implementation of mitigation measure BIO-3 (replacement of lost riparian Habitat) will fully mitigate for any loss of riparian habitat and implementation of mitigation measure BIO-1 (erosion and sediment control) will ensure that disturbed areas are stabilized and appropriate erosion control measures (i.e., silt fencing) have been implemented during, as well as immediately following, construction to minimize and/or prevent erosion and sedimentation effects.
- Construction activities typically include the refueling of construction equipment on location. As a result, minor fuel and oil spills may occur, with a risk of larger releases. Without rapid containment and clean up, these materials could be potentially toxic depending on the location of the spill in proximity to surface water features, including Big Sulphur Creek. Implementation of mitigation measure BIO-2 (prevention of accidental spills) will limit the potential for this impact.

Western pond turtles

The western pond turtle (*Emys marmorata*) is a State species of special concern and has no Federal status. Western pond turtles are approximately 3.5–7.5 inches in length and drab brown or olive-colored, lacking prominent markings on their carapace. The name “pond” turtle is somewhat misleading as they are often associated with the quiet waters of rivers and streams. Within their aquatic habitat, they are associated with areas that contain underwater refugia such as rocks, submerged vegetation, or holes along a bank (Hays et al. 1999). They also require basking sites, such as partially submerged logs, rocks, mats of floating vegetation, and open mud banks. In colder areas, the turtles may hibernate underwater in bottom mud or in upland sites that are near water and have deep layers of duff. Overwintering and aestivation sites often occur in upland areas with deep layers of duff or leaf litter. The western pond turtle is a dietary generalist, often foraging on the bottom of water features for aquatic invertebrates.

Western pond turtles are long-lived, the maximum life-span is 50-70 years, and require approximately 10 years to reach sexual maturity (Hays et al. 1999). Eggs are typically laid from March through August. Nests are typically located in open areas with good sun exposure and few shrubs or trees and may be a considerable distance from the aquatic site (up to 0.25 mile) (Jennings and Hayes 1994). Females excavate an upland nest chamber in which the eggs are laid and subsequently buried. Eggs hatch approximately 2.5– 4 months later. Hatchling turtles are thought to emerge from the nest and move to the aquatic site in the spring.

The rocky, low-flow channel of Big Sulphur Creek within the BSA provides suitable habitat for Western pond turtles. Biotic surveys within the project BSA found several Adult pond turtles basking on rocks just upstream of the existing bridge structure.

Potential Impacts to Western Pond Turtles from the Project

The proposed project has the potential to result in adverse impacts on western pond turtles as identified below:

- Although unlikely, construction related impacts, especially in-channel work, could result in an adverse effect via direct loss (individual mortality) (e.g., due to operation of equipment in or adjacent to the creek channel when flowing or standing water is present). The potential for direct loss of individuals would only occur during project construction. Implementation of the avoidance and minimization measures will minimize the potential for direct loss.
- Activities related to the construction of the new bridge and roadway approaches would result in some localized loss of vegetation and general disturbance to the soil. Removal of vegetation and soil can accelerate erosion processes in the BSA and increase the potential for sediment to enter Big Sulphur Creek. Excessive sedimentation into the stream channel has the potential to reduce habitat quality for western pond turtles (e.g. decreasing availability of potential food items including aquatic invertebrates). Implementation of Mitigation Measure #3 (replacement of lost riparian habitat) will mitigate for any loss of riparian habitat and implementation of Mitigation Measure #1 (erosion and sediment control) will ensure that disturbed areas are stabilized and appropriate erosion control measures (i.e., silt fencing) have been implemented during, as well as immediately following, construction to minimize and/or prevent erosion and sedimentation effects.
- Construction activities typically include the refueling of construction equipment on location. As a result, minor fuel and oil spills may occur, with a risk of larger releases. Without rapid containment and clean up, these materials could be potentially toxic depending on the location of the spill in proximity to surface water features, including Big Sulphur Creek. Implementation of Mitigation Measure BIO-2 (prevention of accidental spills) will limit the potential for this impact by requiring that the contractor stage equipment and fuels a minimum of 150 ft from Big Sulphur Creek, maintaining spill containment booms at the site, and by maintaining construction equipment to avoid mechanical breakdown and potential for fluid leaks.

Pallid bat

The pallid bat, a California Species of Special Concern and no Federal status, is a year- round resident throughout California, except in the high Sierra Nevada and in Del Norte and western Siskiyou counties in the northwestern corner of the state. Pallid bats often roost in groups (10 – 100+ individuals). They typically use separate day and night roosts and, in general, day roosts are in more enclosed, protected spaces than are night roosts (Tatarian 2001). The well-protected day roosts are required for maternity roosts where the young are reared (i.e., nursery colonies). Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, large tree cavities and various human structures such as bridges (especially wooden and concrete girder designs), barns, and vacant buildings (Sherwin and Rambaldini 2005). Maternity roosts are established in April, with young born in May through June. The young are typically volant (i.e., flying) by July through early August.

Pallid bat was not observed during the field surveys. The existing bridge does not have any suitable roosting crevices. The riparian habitat along Big Sulphur Creek may provide suitable night roosting and foraging habitat for pallid bat. The closest CNDDDB occurrence record for each of these species was recorded along the Russian River about 5 miles west of the BSA. Given the absence of mines, caves, rock crevices, and large snags, the BSA is not anticipated to provide suitable breeding habitat (e.g., maternity roosts) for pallid bat.

Western red bat

Western red bat is a State species of special concern and has no federal status. This species of bat is considered highly migratory and broadly distributed, reaching from southern Canada through much of the western United States. They are typically solitary, roosting primarily in the foliage of trees or shrubs. Day roosts are commonly located in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas, possibly in association with riparian habitat (particularly willows, cottonwoods, and sycamores). Mating occurs in August and September. After delayed fertilization, the young are born in late May through early July. The young are typically volant (i.e., flying) by late July through early August.

Western red bat was not observed during the field surveys. The existing bridge does not have any suitable roosting crevices. The riparian habitat along Big Sulphur Creek may provide suitable night roosting and foraging habitat for pallid bat and western red bat. The closest CNDDDB occurrence record for each of these species was recorded along the Russian River about 5 miles west of the BSA. Given the absence of mature stands of cottonwood and sycamore, the BSA is not anticipated to provide suitable breeding habitat for western red bat.

Potential Impacts to Bats from the Project

The existing bridge does not provide suitable roosting crevices and the BSA has a low potential to provide suitable breeding habitat for pallid bat and western red bat. Project implementation is unlikely to have an adverse effect on foraging bats due to the abundance of suitable foraging habitat in the region and the temporary nature of impacts to riparian habitat within the BSA. Therefore, the proposed project is not anticipated to result in adverse impacts to these species. However, the implementation of BIO-8 (Mitigation Measures for Bats) will occur to further reduce to potential for adverse impacts on pallid bat and western red bat.

Migratory Birds

Most birds in the United States, including non-status species, are given special protection under the Migratory Bird Treaty Act of 1918. Riparian trees and street trees in the BSA may provide nesting habitat for songbirds or raptors. The bridge itself does not show any evidence of swallow nesting.

Potential Impacts to Migratory Birds from the Project

Migratory bird species may nest in or adjacent to the project area. Construction disturbance during the breeding season could result in the loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. The proposed project may also result in a small, temporary reduction of foraging or roosting habitat for migratory bird species. However, due to the regional abundance of similar habitats, temporary nature of habitat loss, and implementation of mitigation measure BIO-3 (replacement of lost riparian habitat), and BIO-9 (migratory birds), the project is not expected to result in a significant impact on migratory birds. (1,6,8,18,31,32,33,42)

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation:

BIO- 1- Mitigation Measures for Erosion and Sedimentation Control

Erosion control measures shall be implemented during construction of the proposed project. These measures shall conform to the provisions in the Caltrans Standard Specifications and the special

provisions included in the contract for the project. Such provisions include the preparation of a Storm Water Pollution Prevention Plan (SWPPP), which describes and illustrates the of best management practices (BMPs) in the project site. Erosion control measures to be included in the SWPPP or to be implemented by the County include the following:

- To the maximum extent practicable, activities that increase the erosion potential in the project area shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall events to transport sediment to surface water features. In channel construction will be conducted from June 15-October 31 and upland construction will likely occur throughout the year as long as work activities comply with the conservation and avoidance and minimization measures identified herein and for the protection of other sensitive or special-status plant or animal species. For upland construction activities (above the top of bank) that must take place during the late fall, winter, or spring, temporary erosion and sediment control structures shall be in place and operational at the end of each construction day and maintained until permanent erosion control structures are in place.
- Areas where wetland and upland vegetation need to be removed shall be identified in advance of ground disturbance and limited to only those areas that have been approved by the County. Exclusionary fencing will be installed around areas that do not need to be disturbed.
- At completion of construction and in those areas where subsequent ground disturbance will not occur for 10 calendar days or more, weed-free mulch shall be applied to disturbed areas to reduce the potential for short-term erosion. Prior to a rain event or when there is a greater than 50 percent possibility of rain within the next 24 hours, as forecasted by the National Weather Service, weed-free mulch shall be applied to all exposed areas upon completion of the day's activities. Soils shall not be left exposed during the rainy season.
- Suitable BMPs, such as silt fences, straw wattles, or catch basins, shall be placed below all construction activities at the edge of surface water features to intercept sediment before it reaches the waterway. These structures shall be installed prior to any clearing or grading activities. Further, sediment built up at the base of BMPs will be removed before BMP removal to avoid any accumulated sediments from being mobilized post-construction.
- All dewatering activities will be conducted in compliance with the Caltrans Field Guide for Construction Site Dewatering and Section 13-4.03G of the Caltrans Standard Specifications. Water removed from the excavated area for pier and abutment footings or construction of fishway shall be pumped to a temporary sediment retention basin outside of the channel, through a mechanized water filtration system, or into baker tanks or similar storage system and trucked offsite to an authorized disposal site. If a temporary basin is constructed, it shall be located outside of the active channel and include sediment sock or similar sediment control on the discharge.
- If temporary stock piling is used, they shall be located such that they do not drain directly into a surface water feature, if possible. If a stockpiles drains into a surface water feature, catch basins shall be constructed to intercept sediment before it reaches the feature. Stockpiles shall be graded and vegetated with native species, or covered by other means to reduce the potential for erosion.
- Sediment control measures (BMPs) shall be in place prior to the onset of the rainy season and will be monitored and maintained to be in good working condition until disturbed areas have been revegetated with native species.

BIO-2- Mitigation Measures to Prevent Accidental Spills and Pollution

Construction specifications shall include the following measures to reduce potential impacts to vegetation and aquatic habitat resources in the project area associated with accidental spills of pollutants (e.g., fuel, oil, asphalt and grease):

- A site-specific spill prevention plan shall be prepared, approved by the County and implemented for potentially hazardous materials. The plan shall include the proper handling and storage of all potentially hazardous materials, as well as the proper procedures for cleaning up and reporting any spills. If necessary, containment berms shall be constructed to prevent spilled materials from reaching surface water features.
- Where feasible, equipment and hazardous materials shall be stored at least 50 ft away from surface water features.
- Vehicles and equipment used during construction shall receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of materials. Maintenance and fueling shall be conducted in an area at least 50 ft away from Big Sulphur Creek or within an adequate fueling containment area.
- Equipment operating within the OHWM shall use non-toxic vegetable oil for operating hydraulic equipment opposed to traditional hydraulic fluids that can contain a wide range of chemical compounds.
- Place plastic materials (or similar) under asphaltic concrete (AC) paving equipment while not in use, to catch and/or contain drips and leaks.
- Minimize sand and gravel from new asphalt from getting into storm drains, streets, and creeks by sweeping. Old or spilled asphalt must be recycled or disposed as approved by the Resident Engineer.
- AC grindings, pieces, or chunks used in embankments or shoulder backing must not be allowed to enter any storm drain or watercourses. Install silt fence until structure is stabilized or permanent controls are in place.
- Collect and remove all broken asphalt and recycle when practical; otherwise, dispose in accordance with Standard Specification 7-1.13 and to an appropriately permitted site.
- During deck pothole patching application and sweeping operations, petroleum or petroleum covered aggregate must not be allowed to enter any storm drain or water courses. Use silt fence until installation is complete.
- Use only non-toxic substances to coat asphalt transport trucks and asphalt spreading equipment.
- Do not allow Portland Concrete Cement (PCC) or slurry to enter storm drains or watercourses.

BIO-3- Mitigation for Lost Riparian Habitat

The following measures shall be implemented to reduce potential impacts to riparian habitat in the action area:

- The width of the construction disturbance zone within the riparian habitat shall be minimized through careful pre-construction planning.

- Exclusionary fencing shall be installed along the boundaries of all riparian areas to be avoided to ensure that impacts to riparian vegetation outside of the construction area are minimized.
- Riparian habitat areas temporarily disturbed shall be replanted using riparian species that have been recorded along the Big Sulphur Creek in the action area, including willow (*Salix lasiolepis* and *Salix laevigata*), white alder (*Alnus rhombifolia*), Bay Laurel (*Laurus nobilis*), CA Buckeye (*Aesculus californica*), Fremont cottonwood (*Populus fremontii*) Live Oak (*Quercus wislizenii*) and Valley Oak (*Quercus lobata*).
- Onsite creation/restoration shall occur in areas that have been disturbed during project construction and within interstitial spaces of the RSP. The amount of habitat created/restored shall be at a 3:1 ratio of new plantings per large (6 in. in diameter at breast height) woody plant removed. This replanting ratio will help ensure successful establishment of at least one vigorous plant for each plant removed to accommodate the project.
- Plant spacing intervals will be determined as appropriate based on site conditions following construction.
- Non-native tree species removed in riparian areas during project construction will be replaced with native riparian (e.g., willow, alder, and cottonwood)
- Revegetation monitoring would be implemented in compliance with regulatory permit conditions (typically 5 years in duration) and be initiated immediately following completion of the planting. The monitoring surveys will consist of a general site walkover evaluating the survival and health of riparian plantings, signs of drought stress, weed or herbivory problems, and the presence or trash or other debris. Within the mitigation area, less than 50 percent total mortality of planted species (including container stock and hardwood cuttings) would be considered a success, unless other permitting documents require greater survival rates. Volunteer growth of native species would be counted toward the vegetation coverage in the mitigation area. If monitoring results indicate that revegetation efforts are not meeting established success criteria, corrective measures would be implemented.

BIO-4- Mitigation to Prevent of Spread of Invasive Species

The following measures shall be implemented to prevent the spread of invasive species in the action area:

- All equipment used for off-road construction activities will be weed-free prior to entering the construction area.
- If project implementation calls for mulches or fill, they will be weed free
- Any seed mixes or other vegetative material used for re-vegetation of disturbed sites will consist of locally adapted native plant materials.
- Any personal equipment (including boots/waders), construction materials (falsework members, sand bags, etc.) and construction equipment shall be properly disinfected or cleaned according guidance provided by the State of California Aquatic Invasive Species Management Plan (California Department of Fish and Game, (CDFG) 2008; U.S. Bureau of Reclamation 2012) prior to in-channel work to prevent the spread of aquatic invasive species.

BIO-5- Mitigation for Salmonids

- Prior to October 15, the temporary culverts, pipe, and work platforms shall be removed from the channel. The river rock base shall be excavated down to the point at which there is a thin veneer remaining on the existing channel bed. Upon removal of the culverts and fish rock, hand crews may redistribute the remaining fish rock such that it does not become a barrier to the free passage of water or the movement of fish and aquatic animals. It shall not impede, or tend to impede, the passage of fish at any time, pursuant to Fish and Game Code Section 5901.
- The crossings shall not change the flow characteristics (i.e., velocity, depth, width) of the water as it flows through the project area. No ponding of flow shall occur upstream of the pipe.
- Culverts shall be maintained and kept open while in place. Any ponding shall be corrected immediately. The County is responsible for such maintenance as long as the culvert remains in the stream.
- Any structure/culvert placed within a stream where fish do/may occur shall be designed, constructed, and maintained such that they do not constitute a barrier to upstream or downstream movement of aquatic life or cause an avoidance reaction by fish that impedes their upstream or downstream movement. This includes, but is not limited to, the supply of water at an appropriate depth, temperature, and velocity to facilitate upstream and downstream fish migration. For this project, this equates to designing the culverts to meet guidelines outlined in NMFS (2001).
- Any new or previously excavated gravel material placed in the channel shall meet Caltrans' Gravel Cleanliness Specification #227 having a value of 85 or higher (excluding such materials as soil in the RSP to allow for riparian planting).
- Impacts to herbaceous cover will be offset by reseeding any unvegetated and impacted areas with a suitable seed mixture post construction.
- All of the interstitial spaces of the RSP will be filled with well-graded soil to allow for revegetation.
- Any construction equipment operating upon work pads or adjacent to Big Sulphur Creek shall be inspected daily for leaks. External oil, grease, and mud shall be removed from equipment and disposed of properly. Spill containment booms shall be maintained onsite at all times during construction operations and/or staging of equipment or fueling supplies. Fueling trucks shall maintain adequate spill containment materials at all times.
- The contractor shall develop and implement site-specific BMPs, a water pollution control plan, and emergency spill control plan. The contractor shall be responsible for immediate containment and removal of any toxins released.
- The project will require some work in the flowing water of the creek to construct the gravel work pad. In addition, steelhead could be indirectly impacted if soils, fuels or other debris from construction are allowed to enter the water. The fish capture and relocation plan along with the avoidance and minimization measures to protect water quality will minimize these impacts to steelhead.
- Steelhead could also be impacted through loss of shading to the creek via loss of riparian vegetation. The BIO-3- Replacement of lost riparian habitat will minimize this impact to steelhead.

BIO-6- Mitigations for Amphibians

- California giant salamander, foothill yellow-legged frogs and red bellied newts may move into and out of the construction area (BSA) at any time. These amphibians tend to hide and shelter under boulders and down vegetation. One year prior to construction county biologist will simplify habitat by removing features within the BSA to lessen the possibility of these species being present when construction begins.
- Because California giant salamander, foothill yellow-legged frogs and red bellied newts may move into and out of the BSA at any time, a pre-construction survey for the species is necessary to confirm its status (presence/absence) on the site immediately prior to the onset of project construction. Therefore, a qualified biologist shall conduct a minimum of one survey of the BSA for these amphibians. The survey shall be conducted a maximum of one week prior to construction. If individuals of any of these species is found within a construction impact zone, the biologist shall move it to a safe location within suitable habitat based upon their extensive experience working with the species.
- If a California giant salamander, foothill yellow-legged frogs or red bellied newts is encountered during construction, activities in the vicinity shall cease until appropriate corrective measures have been implemented or it has been determined that the individual will not be harmed. Any frogs encountered during construction shall be allowed to move away on their own. Any trapped, injured, or killed frogs shall be reported immediately to CDFW.

BIO-7- Mitigation measures for Turtles

- Because turtles may move into and out of the project site at any time, a pre-construction survey for the species is necessary to confirm its status (presence/absence) on the site immediately prior to the onset of project construction. Therefore, a qualified biologist shall conduct a minimum of one survey of the project site for pond turtles and their nests. The survey shall be conducted a maximum of one week prior to construction. If a pond turtle is found within a construction impact zone, the biologist shall move it to a safe location within similar habitat. If a pond turtle nest is found, the biologist shall flag the site and determine if construction activities can avoid affecting the nest. If the nest cannot be avoided, it will be excavated and re-buried at a suitable location outside of the construction impact zone by a qualified biologist. The County will inform Caltrans when such an activity occurs.
- If a western pond turtle is encountered during construction, activities in the vicinity shall cease until appropriate corrective measures have been implemented or it has been determined that the turtle will not be harmed. Any turtles encountered during construction shall be allowed to move away on their own. Any trapped, injured, or killed turtles shall be reported immediately to CDFW.

BIO-8- Mitigation measures for Bats

- To the extent practicable, the removal of any large trees shall occur outside of the breeding season of pallid bat and western red bat. For the purposes of implementation of this measure, the breeding season is considered to be from April 1 through August 15th.

BIO-9- Mitigation measures for Migratory Birds

Mitigation measure BIO-3 (replacement of lost riparian habitat), the project will minimize permanent loss of nesting sites. However, some removal of riparian vegetation and street trees is required. Tree removal during times of nesting could result in negative effects to the young of nesting birds. The following avoidance and minimization measure will reduce any potential impact to breeding birds:

- The County shall only allow trees to be removed from the project site after August 31, and before February 15 of the following year, when bird nesting is most likely avoided, unless a qualified biologist has inspected the site and determined that the tree removal will not affect nesting birds.
- If work is conducted during the nesting season, pre-construction surveys for nesting birds and other special-status birds and appropriate nesting habitat shall be conducted no more than 3 days prior to ground disturbing activities. If an active nest is found, a qualified biologist, in conjunction with CDFW, shall determine the appropriate buffer size and delineate the buffer using fencing, pin flags, yellow caution tape, and etc. During construction, the qualified biologist shall conduct regular monitoring (at CDFW approved intervals) to evaluate the nest(s) for potential disturbances associated with construction activities. Construction within the buffer shall be prohibited until the qualified biologist determines the nest is no longer active. If an active nest is found after the completion of the pre-construction surveys and after construction begins, all construction activities shall stop until a qualified biologist has evaluated the nest and erected the appropriate buffer around the nest. If establishment of the buffer is not feasible, CDFW and/or USFWS shall be contacted for further avoidance and minimization guidelines.

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

Comment:

The Geysers Road Bridge over Big Sulphur Creek and the BSA are directly surrounded by grazed grasslands to the west and undeveloped steep hillsides to the east. The natural communities of concern within the BSA itself include riparian habitat on the banks of Big Sulphur Creek, Waters of the U.S., designated Critical Habitat for the Central California Coast steelhead DPS, and wildlife corridors.

Riparian Habitat

Riparian habitat is present in a narrow band along the banks of Big Sulphur Creek within the BSA. In general, riparian habitat provides food, water, breeding sites, egg deposition areas, and nesting areas for a wide variety of wildlife. Riparian vegetation provides protective cover and shade and contributes woody debris to stream channels, creating important habitat for aquatic species. Vegetation filters sediment and pollutants in storm water runoff, slows flood flows, provides erosion protection for stream banks, and facilitates groundwater recharge.

The riparian habitat on site is dominated by willows, bays, and alders, and varies from zero to about 60 feet wide on each bank in the project limits.

The CDFG Stream Inventory Report (2006) for Big Sulphur Creek determined that Big Sulphur Creek in general has a low percentage of riparian canopy (especially in the lower stream reaches), and identified opportunities for enhancing (fisheries) habitat by increasing riparian cover throughout the watershed.

Potential Impacts to Riparian Habitat from the Project

The proposed project may result in direct permanent impacts on approximately 0.26 acre of riparian forest, including the removal of approximately 1 valley oak, 3 white alder, 2 arroyo willows and 2 bay laurel trees with greater than 6 inches diameter at breast height (dbh). These impacts would be due to the construction of the new bridge, including the placement of the abutments and rock slope protection.

The project shall be designed and constructed to avoid and minimize removal of riparian vegetation to the maximum extent practicable. Staging areas and construction access routes will avoid

encroachment into riparian vegetation where practicable and minimize encroachment where complete avoidance is not practicable. "Avoided" riparian habitat will be clearly identified in the construction drawings and contractor work plans. Exclusionary fencing will be installed to mark boundaries of avoided riparian areas. The exclusionary fencing shall be inspected and maintained on a regular basis throughout project construction. Additionally, Impacts to riparian habitat will be compensated for as described in mitigation measure BIO-3 (Replacement of Lost Riparian Habitat).

Waters of the United States

Big Sulphur Creek is a perennial stream that discharges to the Russian River. As such, it is subject to jurisdiction under both federal (ACOE) and state (RWQCB) regulations. The limit of ACOE jurisdiction is the ordinary high water mark (OHWM); RWQCB jurisdiction extends to the top of bank.

Sonoma County Environmental Specialist Rich Stabler conducted a delineation of waters of the United States within the BSA on May 11, 2018. Verification of the delineation by the Corps is pending. Potentially jurisdictional waters include a seasonal wetland, perennial stream and intermittent streams. These features occupy a total of 0.87 acre of the BSA. Table 1 provides an acreage and linear distance summary by feature type potentially impacted by the project. The boundaries of waters of the United States within the BSA are illustrated in Figure 5, Wetland Map.

Potential Impacts to Waters of the United States from the Project

The replacement bridge will be a three-span structure supported by new abutments that will be placed above the 100-year flood elevation. The new bridge design uses abutments that will not be located within the OHWM as are portions of the abutments of the existing bridge. Due to the flow velocities of the Big Sulphur Creek, scour protection of the center pier from river flows will be required; the scour protection is expected to consist of a combination of 2-ton and 1-ton RSP around the pier. Although the pier itself is outside the OHWM limits, approximately 302 sq. ft. RSP will be permanently placed within jurisdictional waters of Big Sulphur Creek.

A metal slot drain is proposed to transport existing roadside ditch flow under the roadway approach near the easterly abutment. A 36 inch diameter perforated pipe, approximately 90 feet in length would be used.

The temporary gravel work pad to be placed within Big Sulphur Creek will temporarily impact up to 0.084 acre of waters of the U.S. Once the bridge construction is completed, the rock used to create the work pad will be removed and the creek bottom will be restored to preconstruction grade.

Seasonal Wetland area is present near the easterly approach of the new structure. The location and extent of wetland areas meeting the Army Corps of Engineers' three-parameter wetland definition are shown on the enclosed Figure 5. The total area of seasonal wetlands within the Biological Study Area is about 0.006 acres (250 sq. ft.). The project will avoid the area to the extent possible but final design may encroach into parts of this area.

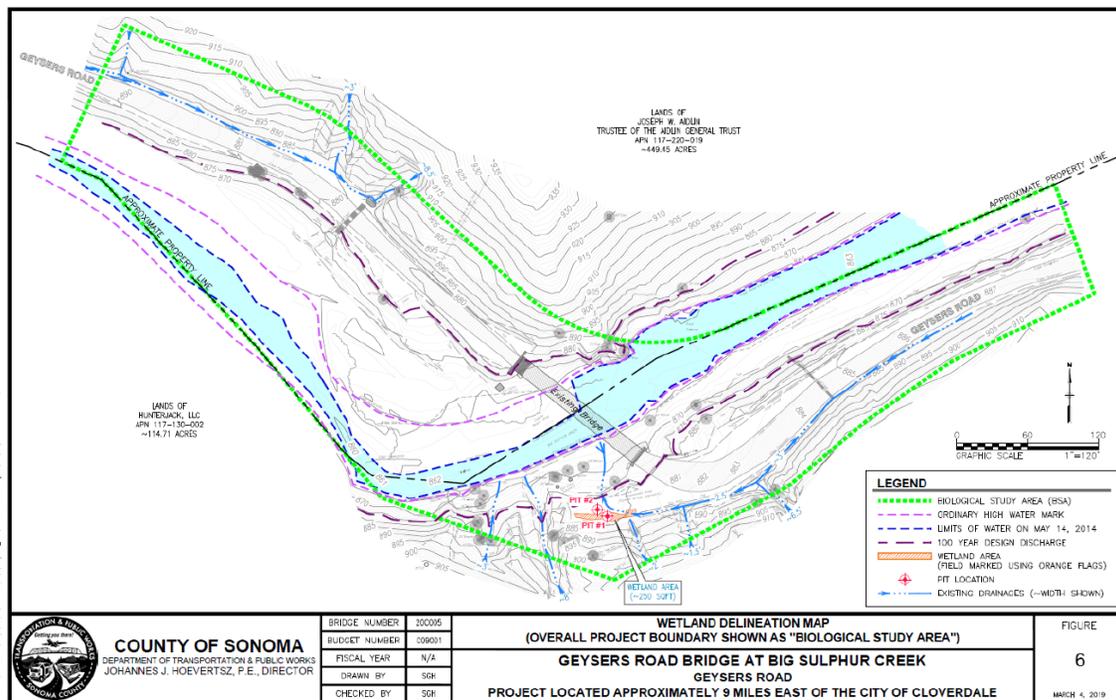
Table 1. Acreage Summary of Potentially Impacted Waters of the United States

| Waters of the United States | Total Acreage | Total Linear Feet |
|------------------------------------|----------------------|--------------------------|
| Other Waters | | |
| Perennial Stream | 0.08 | 900 |
| Intermittent Stream | 0.03 | 930 |

| Wetlands | | |
|--|------------|--------------|
| Seasonal Wetland | 0.006 | 53 |
| Total Waters of the United States | 0.1 | 1,883 |

Executive Order 11990, Protection of Wetlands (1977), calls for no net loss of habitats referred to as wetlands and established a national policy to avoid adverse effects on wetlands wherever there is a practicable alternative. Any jurisdictional areas impacted by the project would be replaced in kind and on-site at a 1:1 ratio to ensure no net loss. Accordingly, a wetland only practical finding is not required at this time.

Figure 5: Wetland Map



Wildlife Corridors

The Big Sulphur riparian corridor potentially serves as a migration corridor for both terrestrial and aquatic or semi-aquatic species, including both common species, as well as for special-status species such as foothill yellow legged frog, western pond turtle, California giant salamander, red bellied newts, and steelhead. (See section 4a for detailed discussion of special status species)

Tracks of common mammal species (including deer and raccoon) were observed in the BSA, indicating its probable use as a migratory corridor for common mammal species. The BSA may also serve as a migratory corridor for special-status species such as foothill yellow legged frog, western pond turtle, California giant salamander, red bellied news, and steelhead.

Potential Impacts to Wildlife Corridors from the Project

The creek will be partially obstructed and there would be elevated noise level in the area by construction activities. The project site and the BSA will be available for wildlife movement after

hours. The project is only expected to require a single working season. Any impact would be temporary as wildlife will still be able to use the site as a migratory corridor both during and after construction. (1,31)

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation:

BIO-10: Mitigation for Riparian Vegetation

The project shall be designed and constructed to avoid and minimize removal of riparian vegetation to the maximum extent practicable. Staging areas and construction access routes will avoid encroachment into riparian vegetation where practicable and minimize encroachment where complete avoidance is not practicable. "Avoided" riparian habitat will be clearly identified in the construction drawings and contractor work plans. Exclusionary fencing will be installed to mark boundaries of avoided riparian areas. The exclusionary fencing shall be inspected and maintained on a regular basis throughout project construction.

BIO-11- Mitigation Measure for Waters of the United States/ Waters of the State

To the extent practicable, the discharge of dredged or fill material into "waters of the United States," including wetlands shall be avoided (this also includes waters not subject to Corps jurisdiction, but subject to RWQCB jurisdiction). However, complete avoidance is not feasible due to the need for the placement of new piers, thus the following measures shall be implemented to avoid or minimize the potential for project-related impacts on "waters of the United States":

- To the maximum extent practicable, activities that increase the erosion potential in the project area shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall events to transport sediment to surface water features. If these activities must take place during the late fall, winter, or spring, then temporary erosion and sediment control structures shall be in place and operational at the end of each construction day and maintained until permanent erosion control structures are in place.
- Areas where wetland and upland vegetation need to be removed shall be identified in advance of ground disturbance and limited to only those areas that have been approved by the County.
- Within 10 days of completion of construction in those areas where subsequent ground disturbance will not occur for 10 calendar days or more, weed-free mulch shall be applied to disturbed areas to reduce the potential for short-term erosion. Prior to a rain event or when there is a greater than 50 percent possibility of rain within the next 24 hours, as forecasted by the National Weather Service, weed-free mulch shall be applied to all exposed areas upon completion of the day's activities. Soils shall not be left exposed during the rainy season.
- Suitable BMPs, such as silt fences, straw wattles, or catch basins, shall be placed below all construction activities at the edge of surface water features to intercept sediment before it reaches the waterway. These structures shall be installed prior to any clearing or grading activities.
- If temporary stockpile sites are used, they shall be located such that they do not drain directly into a surface water feature, if possible. If a stockpile drains into a surface water feature, catch basins shall be constructed to intercept sediment before it reaches the feature. Stockpile sites shall be graded and vegetated to reduce the potential for erosion.

- Sediment control measures shall be in place prior to the onset of the rainy season and will be monitored and maintained in good working condition until disturbed areas have been revegetated.
- Any new or previously excavated gravel material placed in the channel shall be washed at least once and have a cleanliness value of 85 or higher based on Caltrans Test No. 227.
- A site-specific spill prevention plan shall be implemented for potentially hazardous materials. The plan shall include the proper handling and storage of all potentially hazardous materials, as well as the proper procedures for cleaning up and reporting any spills. If necessary, containment berms shall be constructed to prevent spilled materials from reaching surface water features.
- Where possible, equipment and hazardous materials shall be stored at least 50 ft away from surface water features.
- Vehicles and equipment used during construction shall receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of materials. Maintenance and fueling shall be conducted in an area at least 50 ft away from the Big Sulphur Creek or within an adequate fueling containment area.
- Per Executive Order 11990, Protection of Wetlands (1977), no net loss of habitats referred to as wetlands, any jurisdictional areas impacted by the project would be replaced in kind and on-site at a 1:1 ratio to ensure no net loss.

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

Comment:

The Army Corps of Engineers (Corps) regulates "Waters of the United States", including adjacent wetlands, under Section 404 of the federal Clean Water Act. Waters of the United States include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. Potential wetland areas are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act. Areas that are inundated for sufficient duration and depth to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" and are often characterized by an ordinary high water mark (OHWM). The discharge of dredged or fill material into a Waters of the U.S. (including wetlands) generally requires a permit from the Corps under Section 404 of the Clean Water Act.

"Waters of the State" are regulated by the Regional Water Quality Control Board (Water Board) under the State Porter-Cologne Water Quality Control Act. Waters of the State are defined by the Porter-Cologne Act as any surface water or groundwater, including saline waters, within the boundaries of the State. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the ACOE under Section 404 (such as roadside ditches). Section 401 of the Clean Water Act specifies that any activity subject to a permit issued by a federal agency must also obtain State Water Quality Certification (401 Certification) that the proposed activity will comply with state water quality standards. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to Waters of the State, the Water Board has the option to regulate the dredge and fill activities under its state authority through its Waste Discharge Requirements (WDR) program.

The project would result in permanent and temporary impacts on wetland features under the

jurisdiction of the Corps, pursuant to Section 404 of the Clean Water Act, as well as waters protected under the State Porter-Cologne Water Quality Act. See section 4b for further discussion. Mitigation measure BIO-1 (erosion and sediment control), Bio-2 (accidental spills), BIO-4 (invasive species), BIO-11 (Waters of the United States/ Waters of the State) are determined to reduce impacts to less than significant.

Temporary, indirect impacts may occur if construction-related sediment enters streams within the BSA. However, implementation Mitigation Measure BIO-1 would reduce impacts to a less-than-significant level.

The project may generate surplus soils for disposal off-site, and improper disposal of this material could affect off-site wetlands or other sensitive habitats. The impact can be reduced to a less-than-significant level by controlling the disposal of surplus soils, as required by mitigation measure BIO-12 (Disposal of Surplus Solid Waste). (1,31)

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation:

BIO-12- Mitigation Measure for Disposal of Surplus Solid Waste

All surplus soils that cannot be used on the project site shall be disposed of at an acceptable disposal site. If any areas outside the project site are used for disposal or stockpiling of soil or other materials, the contractor shall be required to demonstrate that the site has all the required permits, including, if applicable, a grading permit. The contractor shall notify CDFW of the intent to use the site, and the Sonoma County PRMD to determine if a grading permit is required. The contractor shall be required to provide evidence to the County that the site does not affect wetlands under the jurisdiction of the Corps, or that the site has the appropriate permit from the Corps.

Surplus concrete rubble or pavement shall either be disposed of at an acceptable and legally permitted disposal site or taken to a permitted concrete and/or asphalt recycling facility.

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?

Comment:

Big Sulphur Creek is a regionally important east-west movement corridor and spawning habitat for Central California coast steelhead, which use the creek for both migration and spawning. Replacement of the bridge could result in the temporary disruption of fish moving up and downstream. To ensure that hydraulic conditions are suitable and the temporary work platform would not impede the movement of aquatic organisms, the culverts have been designed within the proposed construction work pad and would be installed according to NMFS' *Guidelines for Salmonid Passage at Stream Crossings* (National Marine Fisheries Service 2001). Other aquatic and terrestrial wildlife undoubtedly move within and through the area in and around the BSA. The creek likely attracts wildlife in the area due to the presence of water. Amphibians and turtles may move through the creek corridor. Limiting construction to daytime hours, will allow wildlife to move through the area during the hours construction is not actively occurring. Biologists will be onsite each morning to survey and potentially move any remaining wildlife outside the construction zone to similar suitable habitat on Big Sulfur Creek.

The area surrounding the BSA is a large expanse of relatively undisturbed habitat that many wildlife

species are likely to utilize as core habitat. Because of the large expanse of relatively open space in the vicinity, the BSA and vicinity is more appropriately described as a core habitat area for a wide variety of wildlife species, which may move in areas throughout the woodland and grasslands in the region. In addition, the impacts to wildlife are temporary and will only occur during the duration of construction of the project. (1, 31)

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation:

Implementation of Mitigation Measure BIO-5 (salmonids), BIO-6, (amphibians) BIO-7 (turtles) would reduce potentially significant impacts to special status fish to a less than significant level.

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

Comment:

Regulatory Framework

The following discussion identifies local environmental regulations that serve to protect sensitive biological resources relevant to the California Environmental Quality Act (CEQA) review process.

Biotic Habitat (BH) Combining Zone

The BH combining zone is established to protect and enhance Biotic Habitat Areas for their natural habitat and environmental values and to implement the provisions of the General Plan Open Space and Resource Conservation Element, Area Plans and Specific Plans. Protection of these areas helps to maintain the natural vegetation, support native plant and animal species, protect water quality and air quality, and preserve the quality of life, diversity and unique character of the County.

Tree Protection Ordinance

Chapter 26, Article 88. Sec. 26-08-010 (m) of the Sonoma County Code contains a tree protection ordinance (Sonoma County 2013). The ordinance designates 'protected' trees as well as provides mitigation standards for impacts to protected trees. While this ordinance is not applicable to County Public Works projects, it is used as a guide for determining impacts and appropriate mitigation measures.

Sonoma County General Plan

The *Sonoma County General Plan 2020* (Sonoma County 2008) Land Use Element and Open Space & Resource Conservation Element both contain policies to protect natural resource lands including, but not limited to watershed, fish and wildlife habitat, biotic areas, and habitat connectivity corridors. Policy OSRC-8b establishes streamside conservation areas along designated riparian corridors.

Riparian Corridor Ordinance

The RC combining zone is established to protect biotic resource communities, including critical habitat areas within and along riparian corridors, for their habitat and environmental value, and to implement the provisions of the General Plan Open Space and Resource Conservation and Water

Resources Elements. These provisions are intended to protect and enhance riparian corridors and functions along designated streams, balancing the need for agricultural production, urban development, timber and mining operations, and other land uses with the preservation of riparian vegetation, protection of water resources, floodplain management, wildlife habitat and movement, stream shade, fisheries, water quality, channel stability, groundwater recharge, opportunities for recreation, education and aesthetic appreciation and other riparian functions and values.

The project as proposed will not conflict with the above policies and ordinances. The bridge has been designed so that vegetation removal will be avoided and minimized to the maximum extent feasible. Riparian trees removed having greater than 6 inches diameter breast height will be replaced at a minimum 3:1 ratio. Mitigation measure BIO-3 (Lost Riparian Habitat) will further ensure the project has a less than significant impact on vegetation.

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation:

BIO-3 (Replacement of lost Riparian Habitat)

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?

Comment:

Currently, there are no adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other approved habitat conservation plans that cover the project area.

Significance Level:

No Impact

5. CULTURAL RESOURCES:

In 2018, Tom Origer & Associates was retained to prepare the following cultural resources reports for the proposed bridge replacement project: 1) Historic Resources Evaluation Report (HRER); 2) Archaeological Survey Report (ASR); and 3) Historic Property Survey Report (HPSR). A brief summary of the HRER and ASR is provided below.

Area of Potential Effects (APE)

The archaeological APE consists of the area of direct impact, existing and proposed right-of-way, temporary and permanent construction easements, and staging areas. It is an irregularly shaped corridor that includes a 1,000 foot long section of Geysers Bridge Road, extending 500 feet in each direction from the center of Geysers Road Bridge. The width of the corridor ranges from about 130 feet at the northwest end to 225 feet at the bridge, and tapers to 90 feet at the southeast end. Because new right-of-way will be acquired, the APE includes portions of parcel 117-220-019 on the north side of Geysers Bridge Road, and from parcel 117-130-002 on the south side.

Historical Resources Evaluation Report (HRER)

Historical Overview

In this isolated area of Sonoma County, mining and tourism have been the two main historical activities. Prospecting in the Mayacamas Mountains occurred as early as 1861, and in 1872 the Cloverdale Mine was established approximately 3,200 feet east of the APE. Cloverdale Mine produced quicksilver (mercury) until 1917. Quicksilver was an important commodity at this time as it aided the extraction of gold and silver from ore, it was also used in the manufacture of explosive caps and paints, and for medicinal purposes (Bradley 1918).

The geothermal properties of this area were well known to local Native American groups and were rediscovered by American settlers in the 1840s. A resort was established southeast of the project area and between 1848 and 1854, many people traveled to The Geysers Resort despite the arduous journey. The rustic tourist attraction provided tent-like lodgings at first, but a hotel was soon constructed. Over the years the resort was expanded as the railroad brought more tourists into the area. Geysers Road opened in 1873 as a toll road and was one of the main routes to the mines and resort area. Touted as the shortest route to the Geysers, the winding 16-mile journey from the railroad at Cloverdale required two hours to reach the resort (*Russian River* Flag 1873). In 1925, Geysers Road was rebuilt and in 1937 the old wooden bridge over Big Sulphur Creek was replaced by the current bridge.

The Geysers region consists of the largest geothermal field in the world, and during the early 20th century the first modern geothermal well was drilled (Hodgson 2010:39). Five additional wells were excavated over the next two years, and in 1958 The Pacific Gas & Electric Company began purchasing power generated from the wells (Hodgson 2010:39). During the 1960s and 70s, the Geysers area was greatly developed to produce geothermal energy and is still an important energy-producing area.

Cultural Resources

The only resource within the APE is the Geyser Road Bridge, a 130-foot long, pin connected, Pratt through truss bridge. This seven-panel bridge was built by the Phoenix Bridge Company using their patented Phoenix column for the posts, top chords, and struts. Constructed c. 1880, this bridge was part of a railroad bridge that spanned the Russian River at Northwood. It was installed at Northwood in 1909 to replace a washed out bridge. The Northwestern Pacific Railroad abandoned their Santa Rosa to Monte Rio branch in 1935, and in 1937 the three trusses were salvaged by the County for use elsewhere (Healdsburg Tribune 1937). The Haupt Creek Bridge (20C0224) and the Gualala Road Bridge (10C0046) are thought to be the other trusses from Northwood. All were built with Phoenix columns, are roughly 13 feet wide, and were erected in their current locations in 1937 or later.

Resource Significance

The Geysers Road Bridge is eligible for the National Register as a contributor to the 1985 thematic district, Historic Truss Bridges of California. The district was determined eligible under Criterion A for the role of the bridge in local and regional history, and under Criterion C for significance in engineering. In 2004, JRP Historical Consulting reinspected bridges that were previously listed in or determined eligible for the National Register and found that Geysers Road Bridge retained historic integrity and continued to meet National Register eligibility criteria (McMorris 2004:68-69). The bridge is also recognized as Sonoma County Historic Landmark 170 and is considered an historical resource under CEQA.

Archaeological Survey Report (ASR)

Background

Environment

The APE is located in the Mayacamas Mountains of north-eastern Sonoma County. The Mayacamas Mountains are underlain by the Franciscan Formation of Late Jurassic to Late Cretaceous age (161.2 to 66 mya) composed primarily of cherts, graywacke, basalt, diabase, gabbro, shale, and limestone. Geologic maps indicate that within the project APE, graywacke is found south of Big Sulphur Creek, while landslide deposits are on the north side (Koenig 1963; McNitt 1968, Sadowski et al. 2016). Big Sulphur Creek flows westerly in a deeply etched channel, and empties into the Russian River at Cloverdale, seven miles west of the APE.

Soils at the northwest end of the APE are of the Yorkville (YuE) series; at the southeast end, soils are of the Laughlin-Yorkville complex (LhG), which is composed of 60 percent Laughlin and 25 percent Yorkville series soils (Miller 1975: Sheet 3). Yorkville soils are moderately well drained clay loam found on ridge tops, side slopes, and mountainous uplands, and the depth to bedrock is about 60 inches (Miller 1975:89). In comparison, Laughlin soils are well-drained loam found on mountainous uplands with slopes of from 30 to 75 percent (Miller 1975:57-58). These shallow soils are underlain by unweathered bedrock at 22 to 32 inches. Vegetation differs between the two soil series. Laughlin soils support the growth of some grasses, manzanita, poison oak, black oak, white oak, and scattered areas of Douglas-fir trees; while plants common to Yorkville soils include annual and perennial grasses, forbs, and scattered oaks and madrone trees. Where the Laughlin-Yorkville complex occurs, runoff is rapid and erosion is common.

Prehistory

Elucidation of a cultural sequence for this area began with Beardsley and Meighan in studies published in 1954 and 1955, respectively. Their work relied on materials excavated by the University of California Archaeological Survey. In 1973, David Fredrickson synthesized prior work, and in combination with his own research, he developed a regional chronology that is used to this day, albeit modified for locality-specific circumstances. Fredrickson's scheme clearly shows that native peoples have occupied the region for over 12,000 years, and during that time shifts took place in their social, political, and ideological regimes.

Ethnography

The Southern Pomo's aboriginal territory falls within present-day Sonoma County. Within the larger area that constitutes the Southern Pomo homelands there were bands or tribelets that occupied distinct areas. The Makahmo Pomo, or Cloverdale Pomo, was a subdivision of the Southern Pomo that occupied the Big Sulphur Creek drainage, about 12 miles of the Russian River Valley, and portions the Yorty and Cherry creek drainages west of Cloverdale (Peri, Patterson, and McMurray 1985). In 1985, an ethnographic survey of the Makahmo was published that synthesized past ethnographic work and included information garnered from new interviews with Southern Pomo and Southern Pomo-Wappo cultural consultants (Peri et al 1985). Figure 5 was adapted from that publication. It shows the area claimed utilized by the Makahmo and various sites identified in the ethnographies. The current project is located near the eastern end of Makahmo lands, where no resources were identified.

Field Methods

An intensive field survey of the archaeological APE was completed by Tom Origer and Rachel Hennessey on June 8, 2017. The entire APE was accessible, including the ADI, staging areas, new right-of-way, and temporary and permanent easements. Seventy percent of the APE was easily examined because there was little to no hindrance to visibility. About 23 percent of the APE had

vegetation dense enough to render visibility fair to poor, requiring the use of hand tools to clear patches of vegetation so that the surface could be inspected. The ground beneath Geysers Road (about seven percent of the APE) could not be inspected. The slopes of the bank were relatively clear and were examined for subsurface deposits.

ASR Findings

During the field survey, no archaeological resources were observed within the APE. The walls of the creek and cut banks were examined carefully for suggestions of buried sites; no evidence of buried archaeological material was found. In addition, a review was made of preliminary geotechnical results, which included five borings made in the path of the proposed bridge. No indication of archaeological materials was found in the boring logs.

The APE is within a rugged, mountainous area, which environmental maps and documents indicate was formed more than 66 million years ago. In addition, Big Sulphur Creek is noted for its steeply cut banks and narrow channel, and the adjacent terrain is also steep. Landslide deposits on the north side of the creek speak to the precipitous nature of the area. A model for predicting a location's sensitivity for buried archaeological sites was formulated by Meyer and Kaijankoski (2017) based on slope, proximity to water, and landform age. A location is considered to have highest sensitivity if it has a slope of five percent or less, is within 150 meters of fresh water, and the landform dates to the Holocene. Note, the Holocene Epoch is the current period of geologic time, which began about 11,700 years ago, and coincides with the emergence of human occupation of the area. Based on those thresholds, the probability of encountering a buried site within the APE is very low. While there is a watercourse within the APE, the landform predates human populations and the terrain is steep.

With the exception of the bridge, review of historical maps found no indication of buildings or other historical structures within the APE. The probability of encountering historical archaeological deposits within the APE is low. (34,35,36,37)

Would the project:

- a) **Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?**

Comments:

Geysers Road Bridge is a designated Sonoma County Landmark. Additionally, the bridge is a historic property determined eligible for the National Register in 1985 and reconfirmed as an historic property in 2004. Based on the field inspections, and review of photographs from 1988 (Jones 1988:7) there appear to be no changes to threaten its National Register status. The DTPW proposes to construct a new bridge across Big Sulphur Creek, adjacent to the existing bridge. The historic bridge would be left in place but closed to traffic, and minor maintenance would be completed, as outlined in the project description.

There are no other historic properties within the APE. (35, 36, 37)

Significance Level:

Less than Significant Impact

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

Comment:

There are no known archaeological resources on the site based on the project level archaeological investigations. Additionally, per AB-52 requirements, local tribes have been notified of the project. Initial responses from the tribes suggest no concerns.

The project has potential to uncover previously unknown materials during construction. Mitigation Measure CUL-1 would reduce this potentially significant impact to a less-than-significant level. (1, 34)

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation

Mitigation Measure CUL-1: Cultural Resources

If archaeological or paleontological materials are discovered during project construction, construction shall cease in the immediate vicinity of the find until a qualified archaeologist is consulted to determine the significance of the find, and has recommended appropriate measures to protect the resource. Further disturbance of the resource shall not be allowed until those recommendations deemed appropriate by the County have been implemented.

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

Comment:

No burial sites are known in the vicinity of the project, and most of the project site has already been disturbed by past construction. Implementation of Mitigation Measure CUL-2 would reduce potentially significant impacts to human remains to a less-than-significant level. (34)

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation

Mitigation Measure CUL-2: Human Remains

In the event that human remains are unearthed during construction, state law requires that the County Coroner be notified to investigate the nature and circumstances of the discovery. At the time of discovery, work in the immediate vicinity would cease until the Coroner permitted work to proceed. If the remains were determined to be prehistoric, the find would be treated as an archaeological site and the mitigation measure CUL-1 would apply.

6. ENERGY

Would the project:

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

Comment:

The project will not change the operational capacity of Geysers Road and such would not cause wasteful, inefficient or unnecessary consumption of energy resources.

During construction, the use of heavy equipment running on diesel fuel will be required. Standard construction best management practices (BMPs) will be included in the project construction specifications and be required project condition to be adhered to by the selected contractor. These construction phase BMPs include restricting the idling time for all construction vehicles and limiting construction times to Monday through Friday, from 7 AM to 7PM. Consumption of energy is necessary, but will the conditions proposed wasteful and inefficient consumption of energy would be less than significant. (1)

Significance Level:

Less than Significant Impact

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

The replacement of a bridge structure on an existing roadway will not conflict or obstruct any plans for renewable energy or energy efficacy standards. (1)

Significance Level:

No Impact

7. GEOLOGY AND SOILS:

In 2015, Taber Associates, Inc. was retained to prepare a Geotechnical Design and Foundation report for the proposed project. This report was used in the following discussion of the environmental setting and impacts analysis for geology and soils.

At the bridge site, published mapping shows surface materials as the Franciscan Formation which consists of a mélange, or mixture, of greywacke, shale, greenstone, conglomerate, chert, and related metamorphic rocks. An update to the above referenced mapping was performed and it depicts the bridge site surface materials mapped as landslide deposits with the area south of the project site mapped as metagraywacke mélange terrain of the Franciscan Complex and north of the project site mapped as greenstone mélange terrain of the Franciscan Complex.

Landslides are mapped on either creek bank and extend upslope approximately 1000 ft along the slope to approximately elev. 1,200. It appears from geologic mapping that Big Sulphur Creek has been influenced by the slide materials and pushed laterally by the slides along various portions of the creek length. From observations at the project site, the west side of the creek (right bank) appears to be more active than the left bank based on the vegetation coverage, hummocky terrain and observed tension cracks in the slopes.

Alluvium within and along the channel is predominately gravel and sand with rock outcrop observed upstream and downstream within the channel. Rock observed in the channel may be intact or "rafts" of rock transported during landslide deposition.

No other evidence of significant geologic hazards (such as faulting, volcanoes, settlement, very soft soils, severe erosion, springs, subsidence, etc.) was observed as the project site as part of the study. The bridge site is not in a tsunami inundation zone.

Would the project:

- a) **Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:**
- i. **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**

Comment:

The project site is near (approximately 3.5 miles away), but outside of the fault hazard zone as defined by the Alquist-Priolo fault maps. Taber Consultants provided a Preliminary Geology and Foundation memo, dated December 2015. Rock at the site is classified as Franciscan Formation. The site is considered adequately stable with bridge foundation support available within the underlying rock unit. No over-riding geologic hazards (e.g., faulting, subsidence, settlement, etc.) were identified by either published geologic mapping or site reconnaissance performed for the site. (9, 38)

Significance Level:

No Impact

ii. **Strong seismic ground shaking?**

Comment:

All of Sonoma County is subject to seismic shaking that would result from earthquakes along the San Andreas, Healdsburg-Rodgers Creek, Maacamas and other faults. Predicting seismic events is not possible, nor is providing mitigation that can entirely reduce the potential for injury and damage that can occur during a seismic event. The design of the bridge structure will follow the Caltrans Seismic Design Criteria. Using accepted geotechnical evaluation techniques and appropriate engineering practices, potential injury and damage can be diminished, thereby exposing fewer people and less property to the effects of a major earthquake. Project conditions of approval require that bridge designs for construction meet all standard seismic and soil test/compaction requirements. The project would therefore not expose people to substantial risk of injury from seismic shaking. (9, 38)

Significance Level:

Less than Significant Impact

iii. **Seismic-related ground failure, including liquefaction?**

Comment:

Strong ground shaking can result in liquefaction, the sudden loss of shear strength in saturated sandy material, resulting ground failure. Areas of Sonoma County most at risk of liquefaction are along San Pablo Bay and in alluvial valleys. Liquefaction does not appear to be an issue except at locations in the upper material within the channel. (38)

Significance Level:

Less than Significant Impact

iv. Landslides?Comment:

The Big Sulphur Creek watershed is an area of abundant landslides. Historic landslides have been mapped on both sides of the creek at the bridge location. The project site has the highest rating for landslide susceptibility in the Sonoma County Hazard Mitigation Plan. The project has been designed with foundations drilled deep into underlying rock. The project would therefore not expose people to substantial risk of injury from landslides.

Significance Level:

Less than Significant Impact

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

Soils on slopes adjacent to the bridge location are mapped as Laughlin-Yorkville complex, on 30-75% slopes. The Laughlin-Yorkville complex is a combination of loams and clay loams, and is considered highly erosive. Within the active channel, the site consists of alluvium (river-washed sands, gravels and cobbles). Portions of the north bank at the new bridge location consist of exposed bedrock.

Significance Level:

Less than Significant Impact

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?Comment:

The project site is subject to seismic shaking as described in item 6.a.ii. Above. No further mitigation is required. However, the design of the bridge structure will follow the Caltrans Seismic Design Criteria.

Significance Level:

Less than Significant Impact

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?Comment:

Table 18-1-B of the Uniform Building Code is an index of the relative expansive characteristics of soil as determined through laboratory testing. For the proposed project, soils at the site have not been tested for their expansive characteristics. No substantial risks to life or property would be created from soil expansion at the proposed project, even if it were to be affected by expansive soils.

Significance Level:

Less than Significant Impact

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?

Comment:

The proposed project would not include the addition or removal of septic tanks or alternative wastewater disposal systems. Therefore, there would be no impact.

Significance Level:

No Impact

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

Comment:

A Cultural Resources Survey was prepared for the project by professional archaeologists on in 2018. There are no known paleontological resources on the site, but the project could uncover such materials during construction. Mitigation measure CUL-1 (cultural resources) will further mitigate in the even previously unknown resources are discovered during construction activities. No unique geologic features have been identified in the project action area.

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation

CUL-1: Cultural Resources

8. GREENHOUSE GAS EMISSIONS:

Would the project:

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

Comment:

The Northern Sonoma County Air Pollution Control District (NSCAPCD) currently does not have adopted Greenhouse Gas (GHG) thresholds of significance for CEQA review projects (NSCAPCD, 2010). Therefore, as the lead agency for the project, the DTPW has elected to use an approach for the determination of significance of GHG emissions based on the GHG significance thresholds adopted by the BAAQMD. While BAAQMD does not have any adopted GHG thresholds for construction-related emissions, their GHG operational threshold of significance is 1,100 metric tons (MT) of CO₂e/yr. (BAAQMD Air Quality CEQA Thresholds of Significance - Table 2-1).

GHG contributions of this magnitude are not anticipated with the proposed replacement of the Big Sulphur Creek bridge because the project would not generate new traffic and traffic volumes are expected to be similar to the existing traffic volumes on Geysers Road.

It is expected that the replacement of the existing bridge would generate the same baseline GHG

emission levels because no additional travel lanes are proposed and no traffic controls (e.g., stop signs or signalization) are proposed. Geysers Road would continue to operate as a “Local Road” with an A-Level-of-Service (LOS), as specified in the Sonoma County General Plan 2020 Circulation and Transit Element. The estimated total Average Daily Trips (ADTs) volume of 83 along Geysers Road is not expected to change as a result of the proposed project. Consequently, the proposed bridge replacement would operate at current GHG emission levels associated with the existing bridge. Based on these assumptions a less than significant impact to GHGs is anticipated with the operational phase of the proposed bridge replacement.

The construction phase of the proposed project is not subject to thresholds of significance. Nevertheless, BMPs are applied by DTPW during the construction phase to assist in lowering GHGs pursuant to AB 32 GHG reduction goals and ensure that construction-related GHG emissions are minimized to the extent feasible. These construction phase BMPs include:

- Restricting the idling time for all construction vehicles
- Limiting construction times to Monday through Friday, from 7 AM to 7PM

Overall, the proposed project would not result in a cumulatively considerable contribution of GHG emissions or a cumulatively significant impact to global climate change. (1, 4, 5, 21)

Significance Level:

Less than Significant Impact

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

Comment:

The County does not have an adopted Climate Action Plan but has established GHG reduction goals. The project, by implementing current county codes would be consistent with local or state plans, policies, or regulations adopted for the purpose of reducing emissions of greenhouse gases.

Significance Level:

No Impact

9. 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?

Comment:

Construction of the proposed project would require use of fuels and other hazardous materials. Improper storage or handling of these materials could result in spills. Mitigation measures BIO-2 (Prevent Accidental Spills and Pollution), and HAZ-1 (Storage of Hazardous Materials) will reduce severity in the event of accidental spills. Potential impacts from spills into the creek can be reduced to a less-than-significant level by requiring standard approved construction methods for handling hazardous materials.

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation

HAZ-1- Storage of Hazardous Materials

The construction contract shall require that any storage of hazardous materials be in compliance with all applicable local, state and federal laws for the protection of surface waters. In the event of a spill of hazardous materials the contractor shall immediately call the emergency number 9-1-1 to report the spill, and shall take appropriate actions to contain the spill to prevent further migration of the hazardous materials to stormwater drains or surface waters.

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?

Comment:

A Phase 1 Initial Site Assessment was completed for the project. That document determined that no hazardous substances including raw materials; finished products and formulations; hazardous wastes; hazardous constituents and pollutants including intermediates and byproducts are currently present at the Site. (39)

Replacement of the existing bridge would involve using equipment that has a potential to release hazardous materials near Big Sulphur Creek. Without adequate BMPs, accidental spills or falling debris could occur, causing potential contamination of the water body and adverse impacts on terrestrial and aquatic life forms.

Implementation of mitigation measure BIO-2 (accidental spills) and HAZ-1 (Storage of Hazardous materials) would reduce potential impacts to a less-than-significant level.

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation:

Mitigation Measure BIO-2 (accidental spills) and HAZ-1 (Storage of Hazardous materials)

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

Comment:

There are no existing or proposed schools within 0.25 miles of the project site. (1)

Significance Level:

No Impact

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

Comment:

The project site was not identified on, or in the vicinity of, any parcels on lists compiled by the California Environmental Protection Agency, Regional Water Quality Control Board, California Department of Toxic Substances, and the California Integrated Waste Management Board (CalRecycle). The area immediately surrounding the bridge site is undeveloped grassland, and hazardous materials are unlikely to be present. Therefore, no impact from hazardous materials is anticipated with the implementation of the proposed project.

Significance Level:

No Impact

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

Comment:

No public airstrips are located in the vicinity of the proposed project. Therefore, no impacts to public airstrips would occur with the implementation of the proposed project. (1)

Significance Level:

No Impact

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

Comment:

The project would not impair implementation of, or physically interfere with the County's adopted emergency operations plan. There is no separate emergency evacuation plan for the County. However, there is the potential for construction activities to slow emergency response times. Implementation of Mitigation Measure TRANS-2 would reduce potentially significant impacts related to any potential delays to a less-than-significant level.

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation:

Mitigation Measure TRANS-2

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

Comment:

The project is located in an area of high fire hazard. However, the project would not expose people to

increased risk from wildland fires beyond existing conditions. It would not construct buildings that would be occupied by people or structures that would be affected by wildland fires. The proposed project consists of replacing an existing bridge and would not increase the vehicle capacity of the bridge. The bridge would be designed to current American Association of State Highway and Transportation Officials Standards to adequately accommodate emergency vehicles. Therefore, no impacts to people or structures from wildland fires are anticipated with the implementation of the proposed project. (1, 11)

Significance Level:

Less than Significant Impact

10. HYDROLOGY AND WATER QUALITY:

Would the project:

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

Comment:

Big Sulphur Creek is a tributary of the Russian River. The "Total Maximum Daily Load" (TMDLs) regulations for pollutants, excluding sediment and temperature, have not been established for this watershed. Sediment impacts in Russian River and its tributaries prompted listing entire Russian River watershed for sediment. The most sensitive beneficial uses supported by the Russian River includes uses associated with the cold water fishery and municipal and domestic supply.

The project will require construction activities within the banks of the Big Sulphur Creek. These activities have the potential to violate water quality standards or waste discharge requirements. A 404 Clean Water Act permit from the Corps, 401 Clean Water Act certification from the Water Board, , and a 1602 Streambed Alteration Agreement from CDFW will all be obtained prior to project implementation. Typical conditions contained in these permits regulate discharges to Waters of the State, Waters of the U.S., and discharges that may impact fish and wildlife. Mandatory compliance with the conditions set forth by these permits, along with mitigation measures BIO-1 (Erosion and Sediment Control), BIO-2 (Accidental Spills), BIO-3 (Riparian Habitat), BIO-11 (Waters of the US? Waters of the State), HAZ-1 (Storage of Hazardous Materials), HYD-1 (Surface Water), HYD-2 (Storm Water), HYD-3 (Ground Water) contained in this Initial Study, will ensure that water quality standards are not violated.

The project will incorporate post-construction BMPs to retain and treat runoff from new impervious surfaces. Drainage shall be designed to limit post-development soil and other pollutant discharges to pre-development levels in compliance with the Sonoma County's best management practices for construction grading and drainage.(1, 42)

*Total Maximum Daily Load – On a broad level, the TMDL process leads to a "pollution budget" designed to restore the health of a polluted body of water. The TMDL process provides a quantitative assessment of water quality problems, contributing sources of pollution, and the pollutant load reductions or control actions needed to restore and protect the beneficial uses of an individual water body impaired from loading of a particular pollutant.

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation:

The County will implement the following mitigation measures during project construction to minimize water quality impacts to Big Sulphur Creek.

Mitigation Measure HYD-1- Surface Water

- No work shall occur between October 15 and June 15 below Big Sulphur Creek top-of-bank.
- By October 15, the County shall require that all disturbed areas around the two permanent bridge abutments and piers be re-graded to match the surrounding topography. Seed and straw will be placed on disturbed areas above channel banks, and all other disturbed areas in the project site, with a jute mesh type or equivalent matting placed over the straw and on disturbed banks, installed per the manufacturer's instructions. This matting shall have no plastic in it. Substitution of materials or erosion control methods shall be required prior approval from PRMD and the DTPW.
- The project site shall be inspected following the first heavy rain, during the middle of the rainy season and at the end of the rainy season following construction. During each visit, areas of significant erosion or erosion control device failure shall be noted and appropriate remedial actions taken.
- Prior to any clearing, grubbing, pruning, or groundbreaking activity, the limits of construction shall be fenced with temporary high-visibility construction fencing to protect environmentally sensitive areas, protect all riparian vegetation beyond that which must be cleared for construction access, and prevent any equipment from unnecessarily extending the work area or entering the wetted channel. In addition, silt fence shall be installed at the base of the construction fencing to prevent debris from entering the creek. All fencing shall be removed upon project completion.
- All stockpiling of construction materials, equipment, and supplies, including storage of chemicals, refueling and maintenance, shall occur outside the creek channel. No equipment shall be washed where wash runoff could enter the creek.
- All refueling and maintenance of equipment, other than stationary equipment, shall occur outside the channel of Big Sulphur Creek, top-of-bank to top-of-bank. Receptacles containing fuel, oil, or any other substance that may adversely affect aquatic resources shall be stored outside of the channel. Any hazardous chemical spills shall be cleaned up immediately.
- Equipment and vehicles operated in the project area will be checked daily to prevent leaks of fuels, lubricants or other fluids to the creek.
- To minimize fluid leaks during operation, refueling, and maintenance of stationary equipment, spill control absorbent material shall be in place underneath this equipment at all times to capture potential leaks.
- Prior to construction, the contractor shall be required to prepare an Accidental Spill Prevention and Cleanup Plan. This plan shall include required spill control absorbent material, for use beneath stationary equipment, to be present on site and available at all times.
- The County shall require the contractor to use a drilling mud and slurry seal that is non-toxic to aquatic life for all drilling activities related to the permanent or temporary bridges. All drilling muds and fluid within all drilled holes shall be contained on site in tanks, removed from the project area, and disposed of in a permitted manner.
- No equipment, including concrete trucks, shall be washed within the channel of the creek, or where wash water could flow into the channel. Prior to project construction, the contractor shall

establish a concrete washout area for concrete trucks in a location where wash water will not enter Big Sulphur Creek. The washout area shall follow the practices outlined in the North Coast Regional Water Quality Control Board Erosion and Sediment Control Field Manual (page 107-108, July 1999) or equivalent guidelines. Substitution of the designated concrete washout area or methods shall require prior approval from PRMD and the DTPW.

Mitigation Measure HYD-2 Storm Water

- If work is to occur on the roadway and bridge approaches during the period October 15 to June 15, all drainage inlets within the project limits shall be protected from receiving polluted storm water through the use of filters such as fabrics, gravel bags, straw wattles, or other appropriate BMPs.
- The County proposes to plant willow springs around the outfall located near the top of the easterly bank in order to reduce erosion of the bank associated with storm water discharge, which will in turn reduce sediment discharge to the creek.
- Construction grading and drainage shall be designed and constructed to maintain natural and existing drainage patterns.

Mitigation Measure HYD-3 Groundwater

- Water encountered during construction of the bridge foundations shall be pumped to an upland location where it cannot flow back into water courses or to storage tanks or trucks for disposal to a permitted upland location (not within the banks of any waterway).

Mitigation Measure HYD-4- Projects disturbing greater than 1 acre (General Construction Permit)

- Construction activities which involve disturbing 1 or more acres of ground, are subject to the requirements of the State Water Resources Control Board (SWRCB) NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). Construction activities include clearing, grading, excavation, stockpiling, and reconstruction of existing facilities involving removal and replacement. Applicants of construction projects must file for coverage under the General Construction Permit by submitting a complete Notice of Intent (NOI) package to the SWRCB, and developing and implementing a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must contain a site map that shows the construction site perimeter; existing and proposed buildings, lots, roadways, and storm water collection and discharge points; general topography both before and after construction; and drainage patterns across the project site. The SWPPP must include the Best Management Practices (BMPs) that the applicant will use to protect the quality of storm water runoff and the placement of those BMPs.

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

Comment:

The proposed project would involve minimal use of water during and following construction, including for dust control and for watering plants during revegetation. Based on the small disturbance and revegetation areas, the amount of water use would not substantially deplete groundwater supplies. The addition of a very small amount of additional impervious surfaces would not substantially interfere

with groundwater recharge. (1, 42)

Significance Level:

Less than Significant 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?

i. would result in substantial erosion or siltation on- or off-site?

Comment:

It is not anticipated that the proposed project would cause a substantial change to the erosion and accretion patterns. The drainage patterns in the project area will be slightly altered by relocating the impermeable roadway surfaces, but the changes should not cause substantial erosion. The potential for significant erosion and sedimentation from the project stems from the removal of vegetative cover and ground disturbance associated with construction. With the incorporation of mitigation measure BIO-1 (Erosion and Sediment Control), a less-than-significant impact from erosion is anticipated. (1, 42)

ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

Comment:

Existing drainage into the project site will remain unchanged. Re-grading of the roadway to allow construction of the new approach, would not result in a loss of area or linear feet of drainage. Culvert replacements would occur in kind at the same location and at the same length. (1, 10, 46, 47)

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

Comment:

The area surrounding the project site is comprised of steep hillsides, where drainages flow into Big Sulphur Creek. Within the BSA drainage from a small, steep gully crosses under Geysers Road in a pipe culvert and discharges on an upper terrace/gravel bar to Big Sulphur Creek at the western project limit. Flows are intermittent. A rock slope apron at the outlet dissipates flows from the pipe. Another pipe culvert located approximately 300 feet northeast of the bridge carries water from the southern slope and road shoulder under Geysers Road to Big Sulphur Creek. Several small, very rocky, unnamed ephemeral drainages flow down the steep slopes east of the bridge. The waters are intercepted by a road side ditch that outlets just south of the Historic Bridge and into Big Sulphur Creek in the vicinity of the proposed new bridge alignment. These drainages will be improved within the BSA but largely unchanged in location. (1, 42, 46, 47)

iv. Impede or redirect flood flows?

Comment:

The bridge has been designed so that the structure does not impede or redirect flood flows within Big Sulphur Creek. A Location Hydraulic study has been completed for the proposed project, where hydraulic analyses were performed for the existing and proposed conditions using the U.S. Army Corps of Engineers Hydrologic Engineering Centers River Analysis (HEC-RAS) modeling software. The proposed construction design would increase fill within the floodplain and result in a slight rise in the water surface elevation (WSE). Although the WSEs will increase, the proposed new bridge and existing structure would meet the criteria to pass the 100 year storm flows with adequate freeboard (min. 1 ft.).

The FEMA FIRMs were researched for the Project. The Project site is located on FIRM panel

06097C0135E for Sonoma County, effective December 2, 2008 (FEMA 2008). There are no special flood hazard areas as indicated in FIRM Map Index associated with the project site location (FEMA 2014). The project is outside of any special flood hazard areas. (1, 10, 46, 47)

Significance Level:

Less than Significant with Mitigation Incorporated

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

Comment:

The project site is not located in an area subject to seiche or tsunami. The drainage patterns in the project area will be slightly altered as a result of relocating the approach roadways, but the changes will not increase surface runoff and cause flooding. Flooding has not occurred at the project site even after large storm events, and the minor alteration of drainage patterns associated with the proposed project will not add to the frequency of flooding at the project site. (1, 10)

Significance Level:

No Impact

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

Comment:

The larger, wider new bridge structure and roadway approaches would increase the amount of impervious surface in the project area. The additional surface area would result in a slight, but less-than-significant, increase in storm water runoff and the potential for polluted runoff (e.g., lubricants). Roadway and bridge deck drainage for this project would be diverted away from the approach fills and directly into designed and natural drainage swales. Once the water is within the sediment treatment facilities per the project NPDES requirements, it is expected to infiltrate into the ground following typical rainfall events. Resource protection measures BIO-1, BIO-2, BIO-3, HYD-1, HYD-2, HYD-3 will be incorporated into the construction contract specifications for project construction to ensure this potential impact to a less-than-significant level. (1, 42)

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation:

BIO-1, BIO-2, BIO-3, HYD-1, HYD-2, HYD-3

11. LAND USE AND PLANNING:

Would the project:

a) Physically divide an established community?

Comment:

The project would not divide a community, because it would only replace an existing bridge. The existing single lane bridge would be left in place to maintain traffic during construction, and then closed to traffic after the new bridge is completed and opened to traffic. Therefore, no impact from dividing an established community would occur with the implementation of the proposed project. (1)

Significance Level:

No Impact

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

Comment:

Section 65402 of the California Government Code of Regulations requires that public and private projects be reviewed for conformity with the applicable County General Plan. The Comprehensive Planning Division of the Sonoma County Permit and Resource Management Department has reviewed the proposed project and found it to be consistent with the Sonoma County General Plan.

The project would not conflict with any applicable land use plan adopted for the purpose of avoiding or mitigating an environmental effect, including in the Sonoma County General Plan and zoning ordinance. (1, 7)

Significance Level:

Less than Significant Impact

12. 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?

Comment:

The project site is not located within a known mineral resource deposit area (Sonoma County Aggregate Resources Management Plan, as amended 2010). Sonoma County has adopted the Aggregate Resources Management Plan that identifies aggregate resources of statewide or regional significance (areas classified as MRZ-2 by the State Geologist). Consult California Geologic Survey Special Report 205, Update of Mineral Land Classification: Aggregate Materials in the North San Francisco Bay Production-consumption region, Sonoma, Napa, Marin, and Southwestern Solano Counties, California (California Geological Survey, 2013). (1, 7)

Significance Level:

No Impact

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

Comment:

The project site is not located within an area of locally-important mineral resource recovery site and the site is not zoned MR (Mineral Resources) (Sonoma County Aggregate Resources Management Plan, as amended 2010 and Sonoma County Zoning Code). No locally-important mineral resources are known to occur at the site. (1, 7)

Significance Level:

No Impact

13. NOISE:

Would the project:

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

Comment:

The Noise Element of the Sonoma County General Plan establishes goals, objectives and policies including performance standards to regulate noise affecting residential and other sensitive receptors. The general plan sets separate standards for transportation noise and for noise from non-transportation land uses.

The closest receptor is a residence about 0.5 mile away. Construction will occur during daytime hours (7am-7pm) only. The project construction noise will cease at the completion of the project and would not expose receptors to on-going noise that would require attenuation.

The project will not increase transportation noise at the site, because the project will not generate a permanent increase in traffic volumes or shift travel lanes closer to any sensitive noise receptors.(1)

Significance Level:

Less than Significant Impact

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

Comment:

The project includes construction activities that may generate minor ground borne vibration and noise. These levels would not be significant because there are no nearby receptors, and they would be short-term and temporary, and would be limited to daytime hours. There are no other activities or uses associated with the project that would expose persons to or generate excessive ground borne vibration or ground borne noise levels. (1)

Significance Level:

Less than Significant Impact

- c) **For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use**

airport, would the project expose people residing or working in the project area to excessive noise levels?

Comment:

The site is not within an airport land use plan as designated by Sonoma County.

The project would not result in a permanent increase in ambient noise levels, because it would not increase traffic, nor shift travel lanes closer to any sensitive receptors. (1, 7)

Significance Level:

No Impact

14. POPULATION AND HOUSING:

Would the project:

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

Comment:

The project would have no direct or indirect effect on population. It would consist of replacing an existing bridge without any housing or growth inducing development. Nor would the project new access to undeveloped areas. There are no new permanent employment opportunities associated with the project. Therefore, no impacts to population growth, housing or road extensions would occur. (1)

Significance Level:

No Impact

- b) **Displace substantial numbers of existing housing necessitating the construction of replacement housing elsewhere?**

Comment:

No housing would be displaced by the project. Therefore, no impacts caused by displacing existing housing or the need to construct new housing would occur. (1)

Significance Level:

No Impact

15. PUBLIC SERVICES:

Would the project:

- 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 rations, response times or other performance objectives for any of the public services:

Comment:

Construction of the project would not involve substantial adverse physical impacts associated with provision of public facilities or services and the impact would be less than significant. (1, 7)

Significance Level:

Less than Significant Impact

i. Fire protection?

Comment:

CalFire would continue to serve this area with implementation of the project. There would be no increased need for fire protection resulting from the replacement of the existing bridge and the project would not require the provision of new or physically altered police protection facilities. The existing single lane bridge would be left in place to maintain traffic during construction, and then closed to traffic after the new bridge is constructed and opened to traffic. However, there is the potential for construction activities to slow emergency response times. Implementation of Mitigation Measure TRANS-2 would reduce potentially significant impacts related to any potential delays to a less-than-significant level. (1, 44)

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation:

Mitigation Measure TRANS-2

ii. Police?

Comment:

The Sonoma County Sheriff will continue to serve this area. There will be no increased need for police protection resulting from the project. No housing or jobs are included as a part of this project. (1)

Significance Level:

No Impact

iii. Schools?

Comment:

Replacement of the bridge would not increase the capacity of Geysers Road, nor would it increase the surrounding population. As such, no impacts would result from project implementation related to increased demands for schools, parks, or other public facilities. (1)

Significance Level:

No Impact

iv. Parks?

Comment:

No parks will be impacted by the project. (1)

Significance Level:

No Impact

v. Other public facilities?

Comment:

There are no other public facilities near or in the vicinity of the project that will be impacted by the project. (1)

Significance Level:

No Impact

16. RECREATION:

Would the project:

- 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?**

Comment:

Replacement of the bridge would not increase the capacity of Geysers Road, nor would it increase the surrounding population resulting in an increased demand for public recreation facilities. The proposed project would not involve activities that would cause or accelerate substantial physical deterioration of parks or recreational facilities. The project will have no impact on the use of existing neighborhood and regional parks or other recreational facilities. (1, 7)

Significance Level:

No Impact

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

Comment:

The proposed project does not involve construction of recreational facilities. See item 16.a. above.(1)

Significance Level:

No Impact

17. TRANSPORTATION:

Would the project:

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

Comment:

Geysers Road forms a half-loop, connecting with the U.S. 101 corridor on both ends. The project is located approximately 11.5 miles from U.S. 101 driving from the northern end. Geysers Road at this location is classified as a local rural road. It is located in the rugged, rural Mayacamas Mountains, and the land uses surrounding the roadway in the general project vicinity include grazing, extremely low density rural residential development, private recreation (hunting), and geothermal power production at the Geysers geothermal resource area. Average daily traffic on Geysers Road is 83 vehicles per day (County of Sonoma, 2019). Geysers Road is not designated a bikeway in the Sonoma County Bicycle and Pedestrian Plan (2010), and bicyclist/pedestrian use is limited. There is no transit service. The existing single lane bridge will be left in place to maintain traffic during construction and then closed to traffic after the new bridge is completed and opened to traffic. The new bridge would not increase the vehicle carrying capacity compared to the existing bridge and would not generate any new vehicle trips during the operational phase. Most construction operations would not require any roadway closures. Some may require brief closures of 15 minutes or less, but provisions would be made so that emergency vehicles would be subject to delays of 5 minutes or less. Therefore, it would not conflict with any applicable plan, ordinance or policy. (1, 44)

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation Measure TRANS-1- Notification of Closure

- The County shall notify property owners along Geysers Road at least 7 days in advance of the proposed temporary closure.
- Signage shall be placed at both ends of Geysers road notifying motorists of the planned closure.

- b) **Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?**

Comment:

CEQA Guidelines Section 15064.3, subdivision (b) states that for transportation projects that have no impact on vehicle miles traveled (VMT) should be presumed to cause less than significant transportation impact. Replacement of an existing bridge will not increase roadway capacity and will not induce population growth in the project area. No increase to operational VMT would occur with project implementation; therefore, the impact is less than significant. (1, 44)

Significance Level:

Less than Significant Impact

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

Comment:

The existing Geysers Road Bridge is a through truss, single lane bridge with a total width of 14 feet. It lacks shoulders or sidewalks. It has two spans (one 130-foot span and one 16-foot span). It is one span of a former three-span railroad bridge located over the Russian River that was disassembled and moved to the current location in 1937. Immediately east of the bridge, Geysers Road makes a sharp radius turn. Trucks have difficulty negotiating this turn, resulting in collisions with the existing bridge structure.

The proposed project will have two 11-foot lanes and two 3-foot shoulders in order to meet minimum AASHTO standards. The approach roadways need to be realigned to match the alignment and width of the new bridge and ease the abrupt curve on the southeast end of the bridge. The approach roadway on the southeast end will be realigned to provide a 25 mph design speed and the elevation raised by placing a small amount of fill to meet the new required bridge grade. Roadway improvements will include approximately 150 feet beyond the new bridge, and then taper back to the existing roadway. Approach guardrail will be installed approximately 75 feet in advance of the new bridge abutment.

At the northwest end of the bridge, the approach road will also be realigned to provide a 25 mph design speed. The approach road on the northwest end of the bridge will be raised to the new required bridge elevation by placing fill, and will also be widened to match the new bridge lane widths. Approach guardrail and drainage will be installed for a distance of about 275 feet. Retaining wall will be required on the downslope side of the road for a distance of approximately 205 feet.

Though the bridge and approaches themselves will increase from one to two lanes, this does not represent an increase in capacity in Geysers Road and will not appreciably increase speeds along the roadway. The narrow widths and winding roadway along the 28-mile length of Geysers Road will continue to be the controlling factors for vehicle speed and roadway capacity. (1, 44)

Significance Level:

Less than Significant Impact

d) Result in inadequate emergency access?Comment:

The project is located in a State Responsibility Area, so fire protection services and emergency response services are provided by CalFire. The closest CalFire stations are located at 1001 S. Cloverdale Boulevard in Cloverdale, 17475 Fresdon Road in Healdsburg, and 16457 Hwy 175 in Cobb (Lake County). The Cloverdale Fire Protection District also provides fire protection and emergency response to some of the project vicinity. The Fire Protection District is located at 116 Broad Road in Cloverdale.

Police protection is provided by the Sonoma County Sheriff, operating from the main office in Santa Rosa.

The nearest hospital is Healdsburg District Hospital, located at 1375 University Street in Healdsburg, approximately 26 miles from the project site.

Due to the remote location of the project site, in critical emergencies requiring rapid response the emergency response is typically provided via helicopter. This will not change during construction, or in the case of a brief closure. If vehicle response is required, emergency vehicles can enter on the appropriate end of Geysers Road and will not have to cross through the project site. In addition, the

measure listed below will ensure emergency vehicle access through the project site.

Calpine Corporation at the Geysers has its own emergency response plan. According to the plan, all emergency calls are routed through a central "Control One" facility, and then routed to the appropriate emergency response agency, including CalFire and the South Lake County Fire Protection District (SLCFPD). Calpine contracts with the SLCFPD for emergency services, so in many cases, emergency response will come from the Lake County side of the Geysers and will not access via Geysers Road. Calpine also has numerous helipad sites, and emergency response is largely via helicopter. Calpine has requested advanced notification of planned bridge closures during construction (Spooner, 2010).(1, 44)

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation

Mitigation Measure TRANS-2 - Emergency Access

- Emergency response organizations and Calpine Corporation will be notified of the project construction schedule and any closure in advance. The County will require the contractor to provide passage of emergency vehicles through the project site at all times. The Contractor shall make plans for emergency vehicle staging on the easterly approach if complete closure is determined necessary at any point in the construction schedule.

e) Result in inadequate parking capacity?

Comment:

There is only parking on the road shoulder and this will not change due to the project. During construction activities parking at the site may not be available but would be just slightly down the road. (1)

Significance Level:

No Impact

18. TRIBAL CULTURAL RESOURCES:

Would the project:

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

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5030.1(k), or

Comment:

There are no known tribal cultural resources on the site. Additionally, per AB-52 requirements, local tribes have been notified of the project. Initial responses from the tribes suggest no concerns.

The project has potential to uncover previously unknown materials during construction. Mitigation Measure CUL-1 would reduce this potentially significant impact to a less-than-significant level. (1, 34, 36)

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation:

Mitigation Measure CUL-1: Cultural Resources, CUL-2: Human Remains

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

Comment:

There are no known tribal cultural resources on the site. See 18.a. above. (1, 34, 36)

Significance Level

Less than Significant with Mitigation Incorporated

Mitigation:

Mitigation Measure CUL-1: Cultural Resources, CUL-2: Human Remains

19. UTILITIES AND SERVICE SYSTEMS:

Would the project:

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

Comment:

The project would not generate any septic effluent or wastewater discharge to contribute to the need for construction of water treatment facilities. The project will not require the construction of wastewater treatment facilities or expansion of existing facilities. The site will be graded to match adjacent slopes to ensure proper storm water drainage. Storm water drainage will adhere to conditions of project permits in compliance with the Clean Water Act and CA Department of Fish and Wildlife. Therefore, no impacts resulting from exceeding wastewater treatment standards would occur. (1)

Significance Level:

No Impact

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

Comment:

The proposed project would not include any buildings or structures requiring new or expanded water supplies. Therefore, impacts would be less than significant. (1)

Significance Level:

No Impact

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

Comment:

The project would not generate any wastewater discharge. Therefore, no impacts relating to wastewater treatment facility's capacity would occur. (1)

Significance Level:

No Impact

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

Comment:

Disposal of the waste that would result from the temporary construction phase of the proposed project would not exceed state or local standards. Therefore, impacts would be less than significant. (1)

Significance Level:

Less than Significant Impact

- e) Comply with federal, state, and local management and reduction statutes and regulations**

related to solid waste?

Comment:

Sonoma County has access to adequate permitted landfill capacity to serve the proposed project. Sonoma County has a solid waste management program in place that provides solid waste collection and disposal services for the entire County. The program can accommodate the permitted collection and disposal of the waste that would result from the temporary construction phase of the proposed project. Therefore, impacts would be less than significant. (1)

Significance Level:

Less than Significant Impact

20. WILDFIRE

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

The project is located within the State responsibility area, and is land classified as a very high fire severity zone. (1, 7)

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

The project will not substantially impair emergency response. The structure has been design to better accommodate large vehicles associated with accessing the Geysers Geothermal operation. This will enhance the ability to evacuate the area in the event of emergency.

Emergency response access will be mitigated to less than significant with mitigations incorporated. See 17(d). TRANS-2 (Emergency Assess) (1, 7, 44)

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

The project is located in a very high Fire Hazard Severity Zone. Conditions in the surrounding area will remain unchanged compared to existing. The project will not expose occupants to wildfire. (1)

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

The roadway alignment will change slightly. The new section of roadway will require less short-term maintenance compared to the existing infrastructure. This change will not exacerbate fire risk at the project site nor in the surrounding areas. (1)

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

The project will not expose people to significant risk. The new bridge is designed so that downstream conditions would not change. The bridge will not alter area environmental conditions in the event of flooding, landslides, post-fire slope stability or drainage changes.

Significance Level:

Less than Significant with Mitigation Incorporated

Mitigation:

TRANS-2 (Emergency Assess)

21. 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, 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?**

The incorporation of the mitigation measures included in Section 4 (Biological Resources) would reduce potential impacts to fish, wildlife, plants, to a less-than-significant level. The project site contains the existing County Landmark Bridge over Big Sulphur Creek, which is also determined to be eligible for the Nation Register. As designed, the historic structure is to remain in place, with limited maintenance that will not change the resources eligibility for the Nation Register.

Beyond the existing structure, the project site does not contain any other object, building, structure, site, area, place, record, or manuscript that a lead agency determined to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. However, cultural resources could potentially be uncovered during construction. Mitigation measures included in Section 5 (Cultural Resources and Human Remains) would reduce potential impacts to a less-than-significant level.

Less than Significant with Mitigation Incorporated

- 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)?**

Cumulative impacts are impacts on the environment that result from the incremental impacts of a proposed project when added to other past, present, and reasonably foreseeable future actions (State CEQA Guidelines Section 15355[b]). The replacement of Geysers Road over Big Sulphur Creek is not anticipated to intensify development within the Geysers area. An additional bridge replacement is anticipated to take place on Geysers Road over Frasier Creek, a tributary to Big Sulphur approximately 1.5 miles downstream, and outside of this project’s view shed. The Frasier Creek Bridge project is anticipated to be completed the following construction season. Potential impacts of the project could be reduced to less-than-significant via feasible mitigation measures similar to what is described for the Big Sulphur Bridge project. Given that the proposed project’s potentially significant impacts can also be completely mitigated, cumulative impacts would be less than significant and the project’s contribution to cumulative impacts would not be cumulatively considerable.

Less than Significant Impact

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

The proposed bridge replacement would reduce the safety hazards associated the existing bridge crossing Big Sulphur Creek, which has a low seismic sufficiency rating and been determined to be functionally obsolete. Improved approach geometry would offer user a better site distance. Because the proposed project represents a net decrease in environmental effects that could adversely impact human beings, either directly or indirectly, project impacts to human beings would be less than significant.

Less than Significant Impact

References

1. Professional judgment and expertise of the environmental/technical specialists evaluating the project, based on a review of existing conditions and project details, including standard construction measures.
2. Sonoma County Important Farmland Map 1996. California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program.
3. Assessor's Parcel Maps, County of Sonoma
4. BAAQMD CEQA Guidelines; Bay Area Air Quality Management District; April 1999; California Air Resources Board (CARB) <http://www.arb.ca.gov/>
5. Northern Sonoma County Air Pollution District (NoSoCo AIR). Air Monitoring Program. <https://nosocoair.org/air-quality>
6. California Natural Diversity Database, California Department of Fish & Game. ADD LINK
7. Permit and Resources Management Department (PRMD), Sonoma County General Plan 2020 (as amended), September 23, 2008.
8. California Environmental Protection Agency - <http://www.calepa.ca.gov/SiteCleanup/corteseList/default.htm>; California Regional Water Quality Control Board - <http://geotracker.swrcb.ca.gov/>; California Dept of Toxic Substances Control http://www.dtsc.ca.gov/database/calsites/cortese_list.cfm, and Integrated Waste Management Board - <http://www.ciwmb.ca.gov/SWIS/Search.asp>
9. Alquist-Priolo Special Studies Zones; State of California; 1983. http://www.conservation.ca.gov/cgs/rghm/ap/Pages/official_release.aspx
10. Flood Insurance Rate Maps, Federal Emergency Management Agency <https://msc.fema.gov/portal>
11. Special Report 120, California Division of Mines and Geology; 1980. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sr/SR_120/SR_120_Text.pdf
12. General Plan Environmental Impact Report, Sonoma County Permit & Resource Management Department. <http://www.sonoma-county.org/prmd/gp2020/gp2020eir/index.htm>
13. Standard Specifications, State of California Department of Transportation, available online: http://www.dot.ca.gov/hq/esc/oe/specs_html
14. American National Standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Maintenance – Standard Practices, Pruning (ANSI A300 (Part 1)-2008 Pruning), American National Standard Institute (ANSI) and National Arborist Association (NAA), 2008;
15. Best Management Practices: Tree Pruning, International Society of Arboriculture (ISA), 2008.
16. Valley Oak Protection Ordinance, County Code Section 26-67; Sonoma County, December 1996.
17. Heritage or Landmark Tree Ordinance, County Code Chapter 26D; Sonoma County.
18. Manual of Standards for Erosion and Sediment Control Measures, Association of Bay Area Governments; May, 1995.

19. Soil Survey of Sonoma County, California, Sonoma County, U.S. Department of Agriculture; 1972.
https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/california/sonomaCA1972/sonomaCA1972.pdf
20. Evaluation of Groundwater Resources, California Department of Water Resources Bulletin 118; 2003.
<http://water.ca.gov/groundwater/bulletin118/publications.cfm>
21. Sonoma County Congestion Management Program, Sonoma County Transportation Authority; December 18, 1995.
22. Sonoma County Aggregate Resources Management Plan and Program EIR, 1994.
23. Sonoma County Bikeways Plan, Sonoma County Permit and Resource Management Department, August 24, 2010.
24. Sonoma County Permit and Resource Management Department and Department of Transportation and Public Works Traffic Guidelines, 2014
25. Sonoma County Permit and Resource Management Department, Visual Assessment Guidelines, (no date)
26. Sonoma County Permit and Resource Management Department Noise Guidelines, 2017
27. Sonoma County Water Agency, Sonoma Valley Groundwater Management Plan, 2007 and annual reports. <http://www.scwa.ca.gov/svgw-documents/>
28. Sonoma County Water Agency, Santa Rosa Plain Groundwater Management Plan, 2014.
http://www.water.ca.gov/groundwater/docs/GWMP/NC-5_SRP_SonomaCoWaterAgency_GWMP_2014.pdf
29. Sonoma County Department of Transportation and Public Works. Exhibit 6-Preliminary Environmental Study (PES) Form 2010
30. Visual Impact Assessment, Minor Level, Prepared for Caltrans by Sonoma County PRMD, 2020.
31. Natural Environment Study, Prepared for Caltrans by Sonoma County PRMD, 2019.
32. Biological Assessment, Prepared for Caltrans by Sonoma County PRMD, 2019
33. Biological Opinion, NOAA Fisheries, 2020
34. Archaeological Survey Report, Tom Origer & Associates, 2018.
35. Historic Property Survey Report, Tom Origer & Associates, 2018.
36. Historical Resource Evaluation Report, Tom Origer & Associates, 2018.
37. Finding of No Adverse Effect, Tom Origer & Associates, 2020
38. Preliminary Geology and Foundation Discussion, Taber Consultants, 2015
39. Geotechnical Design and Foundation Report, Taber Associates Inc., 2015.
40. Bridge Site Data Submittal and Type Selection Report, TRC, 2015
41. Phase 1 Initial Site Assessment, TRC Solutions, 2015.

42. Water Quality Assessment Memo, Prepared for Caltrans by Sonoma County PRMD.
43. Technical Memorandum, Location Hydraulic Study, WRECO, 2015.
44. Technical Memorandum - Traffic, Prepared for Caltrans by Sonoma County PRMD.
45. Technical Memorandum - Equipment Staging, Prepared for Caltrans by Sonoma County PRMD.
46. Location Hydraulic Study. WRECO. 2015
47. Bridge Design Hydraulic Study Report. WRECO. 2015