MITIGATED
NEGATIVE DECLARATION / INITIAL STUDY
AND
MITIGATION MONITORING AND REPORTING PROGRAM

PREPARED FOR:

SONOMA COUNTY
DEPARTMENT OF TRANSPORTATION & PUBLIC WORKS

FREESTONE FLAT ROAD BRIDGE REPLACEMENT PROJECT

April 2022

Sonoma County Department of Transportation & Public Works
2300 County Center Drive, Suite B-100
Santa Rosa, California 95403

Mitigated Negative Declaration

Sonoma County Department of Transportation & Public Works
2300 County Center Drive, Suite B-100, Santa Rosa, CA 95403
(707) 565-2231

Pursuant to Section 15071 of the State CEQA Guidelines, this proposed Mitigated 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: Freestone Flat Road Bridge Replacement Project

Project Location: Freestone Flat Road Bridge over Salmon Creek, southwest portion of the County

Lead Agency: Sonoma County Department of Transportation and Public Works

Decision Making Body: County of Sonoma Board of Supervisors

Project Proponent: Sonoma County Department of Transportation and Public Works

Project Description: The Sonoma County Department of Transportation and Public Works (DTPW) proposes to replace the existing Freestone Flat Road Bridge, which is a two-span, steel-girder truss bridge over Salmon Creek, in the southwest portion of the County. The existing bridge would be replaced with a two-lane, cast-in-place prestressed concrete box-girder bridge supported on cast-in-drilled-hole piles at the abutments. The new bridge would be located parallel to and southeast of the existing bridge. The existing bridge would remain in service until the new bridge is complete, then disassembled and removed from the site.

Building the bridge on a new alignment requires the construction of new approaches on the east and west sides of the replacement bridge. Existing intersecting roads, including Scott Robin Road and a private driveway, would be modified to meet the new location of Freestone Flat Road as it approaches the bridge.

Public Review: The Draft IS/MND was circulated for a 32-day public review period that began on August 7, 2020 and ended on September 8, 2020. The Sonoma County Department of Transportation and Public Works received eight comment letters on the Draft IS/MND. The comment letters are provided in Appendix F to the IS.

Where appropriate in response to the comments received, the text of the IS has been revised. All changes are provided in the attached Final IS. Text additions are indicated by underlined text. Deleted text is indicated by the use of ~~strikethrough text~~.

ENVIRONMENTAL DETERMINATION

On the basis of this initial evaluation:

I find that the project COULD NOT have a significant effect on the environmental, and a NEGATIVE DECLARATION has been prepared	☐
I find that although the project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been	☒

made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION has been prepared.	
I find that the project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required	☐
I find that the project MAY have a "potentially significant impact" or "potentially significant impact unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	☐
I find that although the project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.	☐

Nader M. S. Dahu — 04.04.2022

Nader M. Dahu, PE
Engineering Division Manager
Sonoma County Department of
Transportation & Public Works
2300 County Center Drive, Suite B-100
Santa Rosa, CA 95403

Date

MITIGATION MEASURES

Mitigation measures have been identified to reduce potentially significant impacts of the project. Implementation of identified mitigation measures would result in avoiding the impact or reducing it to a less than significant level. The mitigation measures are listed below.

Mitigation Measure AIR-1: Dust and Engine Emissions Control Measures

The County or their contractor shall implement the following dust and engine emissions control measures during construction:

1. Water or dust palliatives shall be applied to all exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) and other surfaces that could give rise to airborne dust as needed to control dust.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers or other effective method as necessary to control project-related dust on public roads. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]).

Clear signage shall be provided for construction workers at all access points.

6. Construction equipment will be properly maintained by a certified mechanic.
7. Post a publicly visible sign at work areas where grading activities occur near public and residential areas with the telephone number and person to contact at the County regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure BIO-1: Worker Environmental Awareness Program (WEAP)

A Service-approved biologist will conduct employee education training for employees working on earthmoving and/or construction activities. Personnel will be required to attend the presentation, which will describe the Federal and State statutes protecting threatened, endangered, and special-status species that may be encountered on site; minimization and conservation measures; legal protection of species; and other related issues. Specifically, the WEAP shall include a description of all species identified as having moderate potential to occur in Table 7 of this IS/MND, the areas on site where they may occur, and any mitigation required to reduce impacts on those species. All attendees will sign an attendance sheet along with their printed name, company or agency, email address, and telephone number. The original sign-in sheet will be sent to the Service within seven (7) calendar days of the completion of the training.

Mitigation Measure BIO-2: Qualified Biologist

A biologist(s) approved by the United States Fish and Wildlife Service (Service) and CDFW will be on-site during ground disturbance activities (e.g., grading and vegetation removal) that may result in take of state or federally threatened and endangered species. The qualified biologist must have experience with identifying all federal and state-listed species, as well as special-status species, with potential to occur as determined in Table 7 of this IS/MND. The biologist shall have specific experience identifying western yellow-billed cuckoo and California red-legged frog during all distinct life stages and experience with implementing conservation and other avoidance and minimization measures for these species and interacting with contractors and construction workers to ensure these measures are enforced. The qualifications of the biologist(s) will be submitted to the Service for review and written approval at least thirty (30) calendar days prior to the date earthmoving is initiated at the project site.

Mitigation Measure BIO-3: California Red-Legged Frog Avoidance, Pre-Construction Survey and Biological Monitoring

The County and their contractor shall implement the following measures, which have been approved by the Service, to reduce or avoid impacts to California red-legged frog:

- **Pre-Construction Survey.** No more than twenty-four (24) hours prior to the date of initial ground disturbance, a pre-construction survey for the California red-legged frog will be conducted by a Service-approved biologist at the project site. The survey will consist of walking the project limits and within the project site to ascertain the possible presence of the species. The Service-approved biologist will investigate all potential areas that could be used by the California red-legged frog for feeding, breeding, sheltering, movement, and other essential behaviors. This includes an adequate examination of mammal burrows, such as California ground squirrels or gophers. If any adults, sub-adults, juveniles, tadpoles, or eggs are found, the Service-approved

biologist will contact the Service to determine if moving any of the individuals is appropriate. In making this determination the Service will consider if an appropriate relocation site exists. If the Service approves moving animals, the County will ensure the Service-approved biologist is given sufficient time to move the animals from the work site before ground disturbance is initiated. Relocation would be completed in accordance with the procedures defined in this mitigation measure, below. Only Service-approved biologists will capture, handle, and monitor the California red-legged frog.

- **Construction Timing.** To the extent practicable, initial ground-disturbing activities will be avoided between November 1 and March 31 because that is the time period when California red-legged frogs are most likely to be moving through upland areas. When ground-disturbing activities must take place between November 1 and March 31, Sonoma County will ensure that daily monitoring by the Service-approved biologist is completed for the California red-legged frog.

  To the maximum extent practicable, no construction activities will occur during rain events or within 24-hours following a rain event (with greater than 0.1 inch of rainfall). Prior to construction activities resuming after a rain event non-work period, a Service-approved biologist will inspect the action area and all equipment/materials for the presence of California red-legged frogs. Any California red-legged frog encountered will be allowed to move away from the project site of their own volition or moved only by the Service-approved biologist in accordance with the procedures for California red-legged frog relocation defined below.

- **California Red-Legged Frog Relocation.** Each encounter with the California red-legged frog will be treated on a case-by-case basis in coordination with the Service, but the general procedure is as follows: (1) the animal will not be disturbed if it is not in danger; or (2) the animal will be moved to a secure location if it is in any danger. These procedures are further described below:

  a. When a California red-legged frog is encountered in the action area, all activities which have the potential to result in the harassment, injury, or death of the individual will be immediately halted. The Service-approved biologist will then assess the situation in order to select a course of action that will avoid or minimize adverse effects to the animal. To the maximum extent possible, contact with the frog will be avoided and the applicant will allow it to move out of the potentially hazardous situation to a secure location on its own volition. This procedure applies to situations where a California red-legged frog is encountered while it is moving to another location. It does not apply to animals that are uncovered or otherwise exposed or in areas where there is not sufficient adjacent habitat to support the species should the individual move away from the hazardous location.

  b. California red-legged frogs that are in danger will be relocated and released by the Service- approved biologist outside the construction area within the same riparian area or watershed. If relocation of the frog outside the fence is not feasible (i.e., there are too many individuals observed per day), the biologist will relocate the animals to a Service pre- approved location. Prior to the initial ground disturbance, Sonoma County will obtain approval of the relocation protocol from the Service in the event that a California red- legged frog is

encountered and needs to be moved away from the project site. Under no circumstances will a California red-legged frog be released on a site unless the written permission of the landowner has been obtained by Sonoma County.

The Service-approved biologist will limit the duration of the handling and captivity of the California red-legged frog to the minimum amount of time necessary to complete the task. If the animal must be held in capacity, it will be kept in a cool, dark, moist, aerated environment, such as a clean and disinfected bucket or plastic container with a damp sponge. The container used for holding or transporting the individual will not contain any standing water.

c. Sonoma County will immediately notify the Service once the California red-legged frog and the site is secure. The contact for this situation is the Coast Bay Division Chief of the Endangered Species Program by email and at telephone (916) 414-6623.

- **Avoid Entrapment**
  - Plastic monofilament netting (erosion control matting), loosely woven netting, or similar material in any form will not be used at the project site because California red-legged frogs can become entangled and trapped in them. Any such material found on site will be immediately removed by the Service-approved biologist, construction personnel, or the applicant. Materials utilizing fixed weaves (strands cannot move), polypropylene, polymer or other synthetic materials will not be used.
  - Loss of soil from run-off or erosion will be prevented with straw bales, straw wattles, or similar means provided they do not entangle, block escape or dispersal routes of California red-legged frog.
  - Trenches or pits one (1) foot or deeper that are going to be left unfilled for more than forty- eight (48) hours will be securely covered with boards or other material to prevent the California red-legged frog from falling into them. If this is not possible, Sonoma County and their contractor will ensure wooden ramps or other structures of suitable surface that provide adequate footing for the California red-legged frog are placed in the trench or pit to allow for their unaided escape. Auger holes or fence post holes that are greater than 0.10 inch in diameter will be immediately filled or securely covered so they do not become pitfall traps for the California red-legged frog. The Service-approved biologist will inspect the trenches, pits, or holes prior to their being filled to ensure there are no California red-legged frogs in them. The trench, pit, or hole also will be examined by the Service-approved biologist each workday morning at least one hour prior to initiation of work and in the late afternoon no more than one hour after work has ceased to ascertain whether any individuals have become trapped. If the escape ramps fail to allow the animal to escape, the Service-approved biologist will remove and transport it to a safe location, or contact the Service for guidance.

Mitigation Measure BIO-4: Exclusion Fencing

Temporary exclusion fencing shall be installed around the limits of work areas and access routes to avoid disturbance in unauthorized areas and ensure California red-legged frog or western pond turtle cannot enter the work area after construction commences. Installation of

exclusion fencing shall occur under the supervision of the qualified biologist and immediately following a clearance survey of the area. The exclusion fencing shall have a minimum aboveground height of 30 inches, and the bottom of the fence shall be keyed in at least 4 inches deep and backfilled with soil to prevent wildlife from passing under the fencing. Exclusion fencing shall be installed to prevent species entry into active work areas and to mark the limits of construction disturbance at equipment staging areas, site access routes, construction equipment and personnel parking areas, debris storage areas, and any other areas that may be disturbed. The exclusion fencing shall specifically exclude any areas within the limits of the Salmon Creek ordinary high-water mark and wetted areas of the creek, whichever is higher in elevation.

Mitigation Measure BIO-5: Pre-Construction Survey and Biological Monitoring for Western Pond Turtle

The County and their contractor shall implement the following measures to reduce or avoid impacts to western pond turtle:

- A preconstruction survey for western pond turtle shall occur within 48 hours prior to the start of construction activities within the riparian and aquatic habitat in the BSA.

- A qualified biologist will be present during grubbing and clearing activities in the riparian and aquatic habitat in the BSA to monitor for western pond turtle.

- If a western pond turtle is observed in areas of active construction, construction will cease and a qualified biologist will be notified. Construction may resume when the biologist has either relocated the western pond turtle to nearby suitable habitat outside the limits of project construction, or, after thorough inspection, determined that the western pond turtle has moved away from the area of active construction.

Mitigation Measure BIO-6: Nesting Bird Season Avoidance, Pre-Construction Surveys, and Monitoring

The County and their contractor shall implement the following measures to reduce or avoid impacts to nesting birds during construction:

- **Avoid Tree Removal during Nesting Season.** Tree removal and trimming activities shall avoid the bird nesting season (February 15 through August 31). Trees that have been identified for removal shall be removed prior to the bird nesting season to avoid impacts to nesting birds. Trees shall be cut at ground level and removed from the site. The stump shall remain in place until after the end of the rainy season (April 15). Tree stumps within the roadway prism or in conflict with new bridge foundations may be completely removed during road and bridge construction.

- **Activities During Nesting Season.** If construction commences during the nesting season, the following shall be implemented:
  - A preconstruction survey for nesting birds shall be conducted within 7 days prior to construction within 500 feet of work areas to ensure that no nest shall be disturbed during construction.
  - If active nests of migratory bird species (listed in the MBTA) are found within the project site, or in areas subject to disturbance from construction activities, an

avoidance buffer to avoid nest disturbance shall be constructed. The buffer size shall be determined by a qualified biologist and shall be based on the nest location, topography, cover and species' tolerance to disturbance.

- If an avoidance buffer is not achievable, a qualified biologist shall monitor the nest(s) to document that no take of the nest (nest failure) has occurred. Active nests shall not be taken or destroyed under the MBTA and, for raptors, under the CDFW Code. If it is determined that construction activity is resulting in nest disturbance, work shall cease immediately and the County shall consult with the qualified biologist and appropriate regulatory agencies.
- If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further action is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by special-status birds or that are located outside the avoidance buffer for active nests may be removed. Nests initiated during construction (while significant disturbance from construction activities persist) may be presumed to be unaffected, and only a minimal buffer, determined by a qualified biologist, would be necessary.

Mitigation Measure BIO-7: Discourage Bird Nesting on Bridge

To discourage bird nesting on the existing bridge during construction, existing inactive bird nests on the Freestone Flat Road Bridge shall be removed prior to the onset of construction, between September 1 and February 14 (outside of the nesting season). Following removal of inactive nests, nest deterrent measures shall be installed on the existing bridge to prevent establishment of new nests. Techniques to prevent nest establishment include using exclusion devices (see below), removing and disposing of partially constructed and unoccupied nests of migratory or nongame birds on a regular basis to prevent their occupation, or performing any combination of these techniques.

- *Exclusion Device:* Install bird netting from the bridge prior to start of nesting season (i.e. before February 15). If this technique is used, netting shall be in place from mid-February until the bridge is removed. If a nesting deterrent is used, the deterrent shall be monitored for integrity and effectiveness until the bridge is removed.
- *Nest Removal.* Starting before the nesting season (i.e., prior to February 15), the County or its contractor shall visit the site daily and remove partially completed nests on the bridge using either hand tools or high pressure water. Disturbance or removal of active nests (i.e., nests containing eggs or young) shall not be conducted without the appropriate authorization(s) from the Service and/or the CDFW.

If nests cannot be removed prior to the nesting season (i.e., before February 15), a qualified biologist shall determine if nests are inactive and can be removed before construction begins without disturbing nesting activity. If active nests are identified, construction in the vicinity of the bridge may need to be postponed until nests are determined by a qualified biologist to be inactive or the Service and/or CDFW authorizes the removal of active nests. An effective deterrent to bird nesting shall be installed on the bridge once the nests are removed.

Mitigation Measure BIO-8: Pre-Construction Surveys and Construction Monitoring for Western Yellow-Billed Cuckoo

Preconstruction surveys for western yellow-billed cuckoo and construction monitoring shall be conducted by a qualified biologist (see Measure BIO-2) in all project areas within suitable habitat and a 500-foot buffer from suitable habitat. In the event that western yellow-billed cuckoo(s) are detected within the work area (the area of active equipment uses), all construction

activities in the area shall halt and Caltrans and the Service and CDFW shall be notified by no later than noon of the next business day. Project activities in the area may not proceed until the cuckoo(s) have left the work area. Where cuckoo(s) are detected within 500 feet of the construction area, project activities in the area may proceed with caution under the direction of the qualified biologist who is monitoring the activity of the western yellow-billed cuckoo in the area and has the ability to halt work. If impacts to western yellow-billed cuckoo cannot be avoided, the County and/or Caltrans shall initiate consultation with CDFW and the Service, which may include obtaining a California Endangered Species Act Incidental Take Permit and federal authorization.

Mitigation Measure BIO-9: Riparian Mitigation and Monitoring Plan

The County shall enhance and restore riparian habitat to mitigate for permanent and temporary impacts. The County shall prepare a Riparian Mitigation and Monitoring Plan that addresses mitigation and monitoring for riparian habitat that shall be impacted by the project. The Riparian Mitigation and Monitoring Plan will be provided to CDFW for review and approval prior to the beginning of construction and will also address mitigation requirements contained in the CDFW Streambed Alteration Agreement. The plan shall, at a minimum:

- Identify the location of the mitigation site(s). The County's preference is for mitigation to occur on site or in the immediate project vicinity (along Salmon Creek). The County shall consider off-site mitigation only if mitigation along Salmon Creek is infeasible;
- Require the following mitigation ratios for temporary and permanent impacts. Impact acreage will be based on the project's final engineering design:
    - Temporary impacts to 0.185 acre of riparian habitat restored on-site at a 1:1 ratio (restoration area: impacted area)
    - Permanent impacts to 0.021 acre of riparian habitat mitigated for on-site at a 2:1 ratio (mitigation area: impacted area) or off-site at a ratio to be determined in coordination with CDFW as part of the Streambed Alteration Agreement
- Include the following tree replacement ratios (number replaced: number removed):
    - Non-native trees greater than 4 inches diameter at breast height (DBH) replaced on-site with native riparian species at a 1:1 ratio
    - Native riparian trees greater than 4 inches DBH replaced on-site at a ratio of 3:1
    - Native oak trees replaced on-site at a:
        - 4:1 ratio for oaks that measure 5 to 10 inches DBH
        - 6:1 ratio for oaks that measure 10 to 15 inches DBH
        - 10:1 ratio for oaks the measure greater than 15 inches DBH
- A schematic depicting the mitigation area including initial site photographs;
- The species to be seeded and planted and the ratio of seed mix and/or plantings for each species;
- A work schedule, including names, titles and companies for all individuals who are involved in preparing the plan and conducting activities;
- Specific success criteria;
- A maintenance and monitoring program for 5 years, unless success criteria are met prior to 5 years, in which case maintenance and monitoring would cease; and
- Contingency measures should the success criteria not be met.

Mitigation Measure BIO-10: Protection of Badgers

Prior to construction in badger denning habitat, which is characterized by herbaceous, shrub, and open stages of most habitats with dry, friable soils, a qualified wildlife biologist shall conduct a survey to identify any American badger burrows/dens. No less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities, a qualified biologist shall conduct a survey to determine if American badger den sites are present at the site. If dens are found, they will be monitored for badger activity. If the qualified biologist determines that dens may be active, the entrances of the dens will be blocked with soil, sticks, and debris for 3 to 5 days to discourage the use of these dens prior to project disturbance activities. The den entrances will be blocked to an incrementally greater degree over the 3- to 5-day period. After the qualified biologist determines that badgers have stopped using active dens, the dens will be hand-excavated with a shovel to prevent re-use during construction. No disturbance of active dens will take place when cubs may be present and dependent on parental care, as determined by a qualified biologist.

Mitigation Measure BIO-11: Roosting Bat Protection Plan

A qualified biologist shall conduct a pre-construction survey 14 days prior to tree removal and construction and demolition of the existing bridge. If any active bat roosts are observed within 50 feet of the construction area or on the existing bridge a Roosting Bat Protection Plan shall be prepared and implemented. If no active bat roosts are observed, no further measures would be required. The Roosting Bat Protection Plan will be prepared in accordance with guidance from the California Bat Mitigation Techniques Solutions, and Effectiveness (Johnston, Tatarian, & Pierson, 2004).

Mitigation Measure BIO-12: Special-Status Plants Pre-Construction Survey

A qualified botanist shall conduct a pre-construction survey for rare plants within all areas of project disturbance prior to project start. The qualified botanist shall either mark the species for avoidance and Environmental Sensitive Area (ESA) fencing shall be installed to protect the plant or if the plant cannot be avoided, the plant shall be transplanted under the direction of a qualified botanist. Transplanting would only occur if avoidance is not feasible and any transplanted special-status plants would be replanted within a suitable habitat area within the project area under the direction of a qualified botanist.

Mitigation Measure BIO-13: Tree Replacement and Monitoring Plan

Prior to the start of construction, the County shall determine whether the trees identified for removal would fall under protection of the Tree Protection Ordinance. If any protected tree would be removed, the County shall adhere to the requirements of the Sonoma County Tree Protection Ordinance (Section 26-88-010(m)), including by implementing replacement plantings in accordance with the standards set forth therein. Protocols for the installation, monitoring, and successful establishment of replacement plantings shall be specified in a Tree Replacement and Monitoring Plan. The Tree Replacement and Monitoring Plan shall include protocols for replanting of trees removed prior to or during construction, and management and monitoring of the trees to ensure replanting success. Where it is infeasible to replant the total number of trees required on the project site due to size constraints or repeated failure to thrive, the County may replant a selected number of trees off-site or make in-lieu payment fees in accordance with the terms of the Ordinance.

Mitigation Measure CUL-1: Cultural Resources Sensitivity Training and Inadvertent Discovery

A professional archeologist shall provide sensitivity training to supervisory staff (County staff, biological monitor, and construction foreman) prior to initiation of site preparation and/or construction, to alert construction workers to the possibility of exposing significant historic and/or prehistoric archaeological resources within the project area. The training shall include a discussion of the types of prehistoric or historic objects that could be exposed and how to recognize them, the need to stop excavation at a discovery, and protection and notification. The archaeologist shall coordinate with a Tribal Cultural Monitor to appropriately describe tribal cultural resources within the project area and the values to local tribes. An "Alert Sheet" shall be posted in staging areas, such as in construction trailers, to alert personnel to the procedures and protocols to follow for the discovery of a potentially significant historic and/or prehistoric archaeological resource.

In the event of an unanticipated discovery of archaeological and/or historical deposits during project implementation, the County shall ensure that construction crews shall stop all work within 100 feet of the discovery until a qualified archaeologist can assess the previously unrecorded discovery and provide recommendations. A qualified cultural resource specialist/archaeologist shall inspect the discovery and determine whether further investigation is required. If the discovery can be avoided and no further impacts shall occur, the resource shall be documented on California State Department of Parks and Recreation cultural resource record forms and no further effort shall be required. If work must commence in the sensitive area, it can only be performed using hand tools or powered hand tools, cannot include ground disturbance below the topsoil layer, and can only be accessed on foot. Alternatively, the cultural resource specialist/archaeologist shall evaluate the resource and determine whether it is:

- Eligible for the CRHR (and a historical resource for purposes of CEQA), or
- A unique archaeological resource as defined by CEQA.

If the resource meets the criteria for either a historical resource or unique archaeological resource, work shall remain halted and the cultural resources specialist/archaeologist shall consult with the County staff regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA Guidelines Section 15064.5(b).

Avoidance of the area, or avoidance of impacts on the resource, is the preferred method of mitigation for impacts on cultural resources and shall be required unless there are other equally effective methods. Other methods to be considered shall include evaluation, collection, recordation, and analysis of any significant cultural materials in accordance with a Cultural Resources Management Plan prepared by the qualified cultural resource specialist/archaeologist. The methods and results of evaluation or data recovery work at an archaeological find shall be documented in a professional level technical report to be filed with California Historical Resources Information System.

Work may commence upon completion of evaluation, collection, recordation, and analysis, as approved by the qualified archeologist.

Mitigation Measure CUL-2: Human Remains

In the event of an unanticipated discovery of human remains during project implementation, the County shall ensure that construction crews stop all work within 100 feet of the discovery. The County shall treat any human remains and associated or unassociated funerary objects discovered during soil-disturbing activities according to applicable State laws. Such treatment includes work stoppage and immediate notification of the Sonoma County Coroner, requisition of a qualified archaeologist, and in the event that the Coroner's determination that the human remains are Native American, notification of the Native American Heritage Commission (NAHC), according to the requirements in Public Resources Code (PRC) Section 5097.98. The NAHC would appoint a Most Likely Descendant (MLD). A qualified archaeologist, the County, and the MLD shall make all reasonable efforts to develop an agreement for the treatment, with appropriate dignity, of any human remains and associated or unassociated funerary objects (CEQA Guidelines Section 15064.5[d]). The agreement would take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, and final disposition of the human remains and associated or unassociated funerary objects. The PRC allows 48 hours to reach agreement on these matters. Work may recommence in the area of discovery following treatment of remains and any associated funerary objects.

Mitigation Measure GEO-1: Fill Material Testing and Standards

The fill material recommendations in the final geotechnical evaluation conducted for the project foundations shall be implemented. Fill material recommendations include but are not limited to the following:

- Soils excavated on the project site shall be tested prior to use as fill
- Fill soils used shall have a low expansion potential (expansion index of equal to or greater than 50; sand equivalent of equal to or less than 20), 100 percent passing 3-inch sieve, as approved by a soils engineer

Mitigation Measures GEO-2: Paleontological Resources Sensitivity Training and Inadvertent Discovery

A professional paleontologist shall provide sensitivity training to supervisory staff (County staff, biological monitor, and construction foreman) to alert construction workers to the possibility of exposing significant paleontological resources within the project area. The training shall be conducted to recognize fossil materials in the event that any are uncovered during construction.

In the event that a paleontological resource is uncovered during project implementation, all ground-disturbing work within a 50-foot radius shall be halted. A qualified paleontologist shall inspect the discovery and determine whether further investigation is required. If the discovery can be avoided and no further impacts shall occur, no further effort shall be required. If the resource cannot be avoided and may be subject to further impact, a qualified paleontologist shall evaluate the resource and determine whether it is "unique" under CEQA, Appendix G, part V. If the resource is determined not to be unique, work may commence in the area. If the resource is determined to be a unique paleontological resource, work shall remain halted, and the paleontologist shall consult with County staff regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA. Preservation-in-place (i.e., avoidance) is the preferred method of mitigation for impacts to paleontological resources. If preservation-in-place is not feasible and avoidance is not possible, the fossils shall be recovered, prepared, identified, catalogued, and analyzed according to

current professional standards under the direction of a qualified paleontologist. All recovered fossils shall be curated at an accredited and permanent scientific institution according to Society of Vertebrate Paleontology (SVP) standard guidelines. Work may commence upon completion of treatment.

Mitigation Measure HAZ-1: Debris Collection and Containment Program

Sonoma County shall ensure that a Debris Collection and Containment Program is developed and implemented during project construction. The Program shall include a Lead Compliance Plan and shall ensure that painted bridge materials are treated as a hazardous material and handled in accordance with applicable provisions of Caltrans Standard Special Provisions (2018 or most recent) for the removal of lead paint, Provision 14-11.13, Disturbance of Existing Paint Systems on Bridges. The Program shall also require provisions to protect worker safety and health in compliance with Title 8 California Code of Regulations, including § 1532.1., and provisions for the proper handling and disposal of debris in accordance with all applicable Federal State and local hazardous waste laws.

The contractor shall be required to prepare and submit drawings to the County of the containment systems to be used. The containment system may include the following containment procedure or similar procedure that adequately prevents accidental release of lead paint into the environment:

- Local containment shall be installed prior to removing the bridge for the purpose of containing all paint flakes. Containment shall consist of using tarps to enclose the sides and bottoms of the existing trusses within 10 feet of the support locations and bridge pick-up points (i.e., locations that are used to connect equipment for the purpose of lifting the bridge).
- Where the existing paint is not flaking, the contractor shall have the option of applying a clear coat of paint instead of enclosing the trusses with tarps.
- Following installation of containment tarps and/or clear coat of paint, the existing bridge shall be lifted in one piece from its supports at the abutments and interior pier.
- Further truss disassembly, removal, transport and disposal shall be subject to existing laws and regulations.

Mitigation Measure HAZ-2: Contaminated Soil Disposal

If the County is responsible for removing and/or relocating existing utility poles during project construction, all soil that is excavated during the removal of existing utility poles shall be treated as hazardous materials and shall be transported and disposed of in compliance with federal, state, and local regulations. Excavated holes shall be backfilled with certified clean fill material.

Mitigation Measure HAZ-3: Fire Prevention Procedures

Sonoma County and their contractor shall implement the following fire prevention procedures to reduce the potential risk of fire ignitions during construction:

- Prior to ground disturbing activities, all workers on the project site shall be trained regarding the proper handling and/or storage of materials posing a fire hazards, potential ignition sources (such as cigarettes or sparking equipment), and appropriate types and use of fire protection equipment.

- Fire suppression equipment, including fire extinguishers, water, and shovels, shall be available on-site at all times.
- All ignitions shall warrant a call to the fire department to ensure the ignition is fully extinguished.
- Vehicles shall not be parked in vegetated areas. If vegetated areas must be used for parking, vegetation shall be mowed to a height of less than 4 inches to avoid contact with the underside of vehicles.
- Smoking shall be allowed only inside fully-enclosed vehicles with closed windows. Cigarette butts shall be thoroughly extinguished, properly contained, and transported off-site for disposal.
- Hot work (welding, grinding, cutting, or any other activity that produces flame, sparks, or embers) shall be restricted during red flag warnings or potentially dangerous fire conditions, as determined by the County and communicated to the contractor.

Mitigation Measure NOI-1: Noise Reduction Techniques

Sonoma County and their contractor shall implement the following noise reduction measures to reduce construction noise at nearby receptors:

- The contractor shall prepare a detailed construction plan identifying the schedule for major noise-generating construction activities and distribute this plan to adjacent noise sensitive receptors.
- Noise generating construction activities shall be restricted to between hours of 7:00 am to 7:00 pm Monday through Friday, 9:00 am to 7:00 pm Saturday. The contractor shall request of the Engineer at least 48 hours in advance of the contractor's intent to work on Sundays or holidays. The contractor shall notify the County if work is necessary outside of these hours. The County shall require the contractor to implement a construction noise monitoring program and, if feasible, provide additional mitigation as necessary (in the form of noise control blankets or other temporary noise barriers, etc.) for affected receptors.
- Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Unnecessary idling of internal combustion engines shall be strictly prohibited.
- Locate stationary noise generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project area.
- Utilize "quiet" air compressors and other "quiet" equipment where such technology exists.

Mitigation Measure TRA-1: Construction Traffic Control Measures

The contractor shall prepare and implement a Traffic Control Plan that includes the traffic safety measures listed below. The contractor shall submit the Traffic Control Plan to the County for review at least 14 days prior to construction.

- Traffic safety guidelines compatible with Section 12, "Temporary Traffic Control," of the Caltrans *Standard Specifications*, and the *California Manual on Uniform Traffic Control Devices* (*California MUTCD*) shall be implemented during construction. Project plans and specifications shall require provision of adequate signage and other precautions for public safety during project construction.
- Prior to temporary closures or lengthy delays, signs shall be placed at all entrances to the project site and on major intersecting roads (e.g., Bohemian Highway and Freestone Flat

Road) to notify motorists and bicyclists that traffic shall be subject to delay.

- Local emergency service providers (i.e., fire departments, police departments, ambulance, and paramedic services) shall be notified of the construction schedule and potential for delays prior to the start of construction.
- Emergency service providers and parcels along Freestone Flat Road and Scott Robin Road shall be notified of any temporary closures at least 5 days in advance of the closures. The contractor shall provide proof of the notification to the Sonoma County construction staff.
- The contractor shall allow passage of emergency vehicles through the project site at all times.
- The contractor shall maintain access to all driveways to parcels off the project site throughout project construction.

The contractor shall determine the construction schedule for local roadway improvement projects along the truck routes to and from the project site, particularly any lane and road closures. The contractor shall time large haul and material delivery truck trips to avoid traveling along routes where conflicts could occur due to ongoing roadway improvements.

Mitigation Measure TCR-1: Tribal Cultural Resources Inadvertent Discovery

The training and Alert Sheet identified under Mitigation Measure CUL-1 shall also encompass tribal cultural resources.

In the event that an archaeological resource is discovered, ground-disturbing work shall be halted within 100 feet of the find, and a qualified Tribal Cultural Monitor shall be brought to the site. The qualified Tribal Cultural Monitor shall evaluate the resource and determine whether it is of special importance to a California Native American Tribe. If the resource is determined to not be of importance to the tribe, work may commence in the area.

If the resource meets the criteria for an important tribal resource, work shall remain halted within 100 feet of the find, and the qualified Tribal Cultural Monitor shall evaluate the resource and determine whether it is an important resource to the local Native American Tribe. If the resource is important to the tribe, work shall remain halted within 100 feet of the area of the find and the qualified Tribal Cultural Monitor shall consult with County staff regarding methods to ensure that no substantial adverse change would occur to the significance of the tribal cultural resource pursuant to PRC section 21084.3. Methods may include the following:

- Preservation-in-place (i.e., avoidance) is the preferred method of mitigation for impacts on tribal cultural resources.
- Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
- Protecting the cultural character and integrity of the resource
- Protecting the traditional use of the resource
- Protecting the confidentiality of the resource
- Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
- Protecting the resource.

Work in the area may commence upon completion of treatment, as approved by the County.

TABLE OF CONTENTS

Figures

Tables

Appendices

List of Abbreviated Terms

BAAQMD	Bay Area Air Quality Management District
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CAP	Clean Air Plan
CARB	California Air Resources Board
CC	California Coast
CCC	Central California Coast
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CIDH	cast-in-drilled-hole
CNDDB	California Natural Diversity Database
CO	Carbon monoxide
CO2e	carbon dioxide equivalent
CRHR	California Register of Historical Resources
dB	decibel
dBA	A-weighted sound level
DTPW	Sonoma County Department of Transportation and Public Works
DWR	Department of Water Resources
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administrations
FIRM	Flood Insurance Rate Map
FTA	Federal Transit Administration

LIST OF ABBREVIATED TERMS

GHG	greenhouse gas
HBP	Highway Bridge Program
IS	Initial Study
Lmax	maximum noise level
Leq	average noise level
MLD	Most Likely Descendant
MMRP	Mitigation Monitoring and Reporting Plan
MRZ	Mineral Resource Zone
MT	metric ton
NAAQS	National Ambient Air Quality Standards
NMFS	National Marine Fisheries Service
NOx	Nitrogen oxide
NAHC	Native American Heritage Commission
NPDES	National Pollutant Discharge Elimination System
OHWM	Ordinary high-water mark
OSHA	Occupational Safety and Health Administration
PM_{10}	coarse particulate matter
$PM_{2.5}$	fine particulate matter
Project	Freestone Flat Road Bridge Replacement Project
PPV	peak particle velocity
RCNM	Roadway Construction Noise Model
ROG	Reactive Organic Gas
ROW	right-of-way
RWQCB	Regional Water Quality Control Board
RRD	Resources & Rural Development
Scoping Plan	Climate Change Scoping Plan
SFBAAB	San Francisco Bay Area Air Basin
SO2	Sulfur dioxide
SVP	Society of Vertebrate Paleontology

LIST OF ABBREVIATED TERMS

SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
USACE	U.S. Army Corps of Engineers
USDOA	United States Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
WDRs	Waste Discharge Requirements
WEAP	Worker Environmental Awareness Program
WOS	Waters of State
WOUS	Waters of United States

LIST OF ABBREVIATED TERMS

This page is intentionally left blank.

Initial Study

Sonoma County Department of Transportation & Public Works
2300 County Center Drive, Suite B-100, Santa Rosa, CA 95403
(707) 565-2231

INTRODUCTION

This Initial Study (IS) assesses the potential environmental impact of the Freestone Flat Road Bridge Replacement Project (project) proposed by the Sonoma County Department of Transportation and Public Works (DTPW) and has been prepared in accordance with the California Environmental Quality Act (CEQA) statutes and guidelines for which Sonoma County is the lead agency. Sonoma County has incorporated mitigation measure requirements for the project to mitigate the potentially significant impacts identified in this IS such that no significant impacts will occur. The mitigation measures are summarized in the Mitigation Monitoring and Reporting Plan (MMRP) in Appendix A.

PROJECT INFORMATION

1. Project Title:

Freestone Flat Road Bridge Replacement Project

2. Lead Agency Name and Address:

Sonoma County Department of Transportation and Public Works
2175 Airport Boulevard
Santa Rosa, CA 95403

3. Contact Person and Phone Number:

John C. Leong, Project Engineer
(707) 565-2231

4. Project Location:

The existing bridge is located on Freestone Flat Road where it crosses over Salmon Creek. The bridge is located in an unincorporated area of southwestern Sonoma County, approximately 0.6 mile northwest of the community of Freestone, and 5 miles west of the City of Sebastopol (Figure 1). East of the bridge, Freestone Flat Road has no outlet and serves rural residential areas. Approximately 0.2 mile west of the bridge, Freestone Flat Road ends at the intersection with Bohemian Highway. Scott Robin Road connects to Freestone Flat Road just east of the existing bridge with a single stop sign.

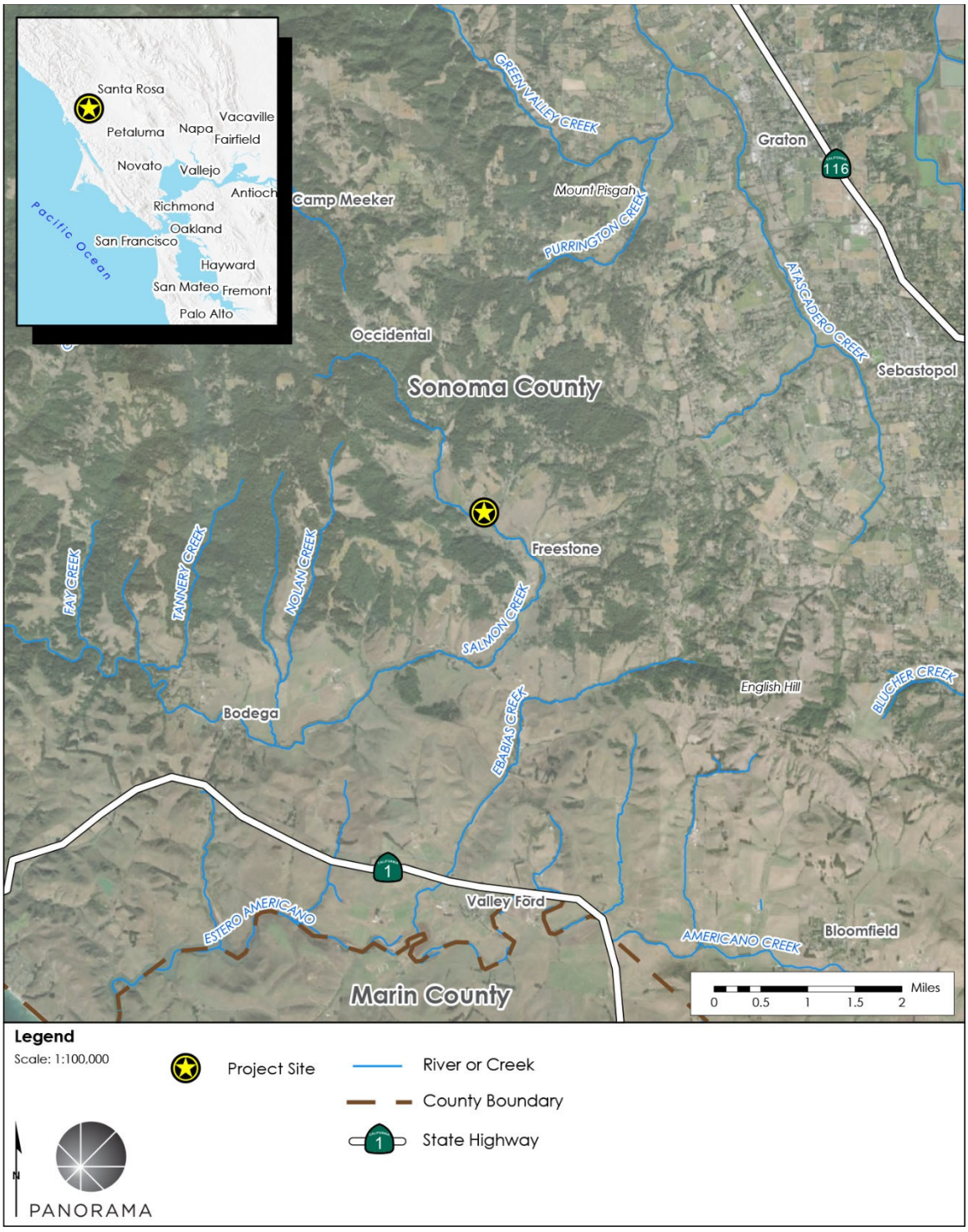
5. Project Sponsor's Name and Address:

Sonoma County Department of Transportation and Public Works
2300 County Center Drive, Suite B-100
Santa Rosa, CA 95403

6. General Plan Designation and Zoning:

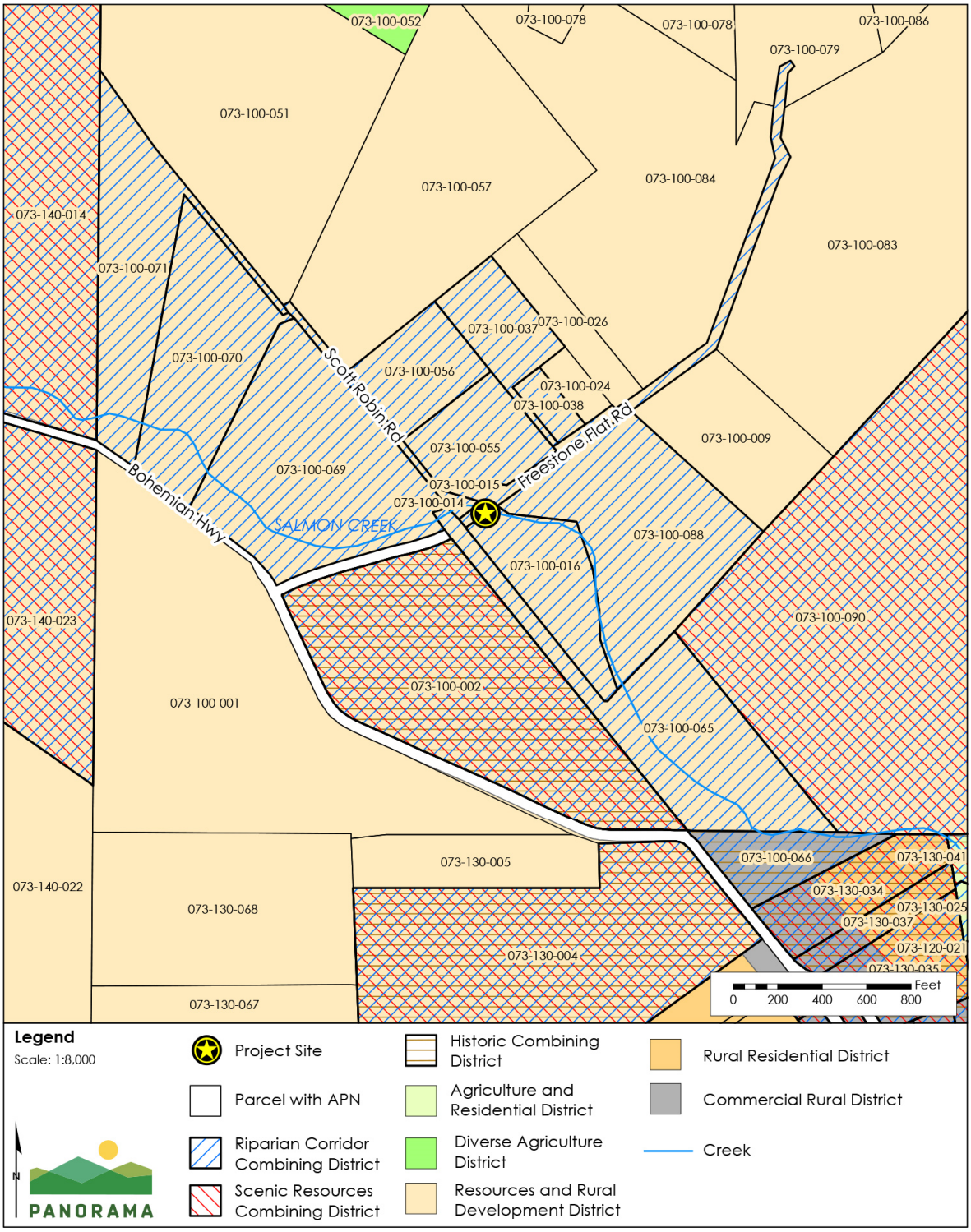
The land use designation of the project site is Resources & Rural Development (RRD 40) in the Sonoma County General Plan, as shown in Figure 2 (Sonoma County, 2008). The project site is zoned as Resources and Rural Development (RRD B6 40) with a Riparian Corridor Combining Zone (RC 200/50) overlaid on Salmon Creek within the project site (Sonoma County, 2019). The specific combining zone designation of RC 200/50 refers to a 200-foot-wide conservation area for development and a 50-foot-wide conservation area for agricultural cultivation. The zoning and land use designations for the project site and surrounding area are shown in Figure 2 and Figure 3, respectively.

Figure 1 Regional Location



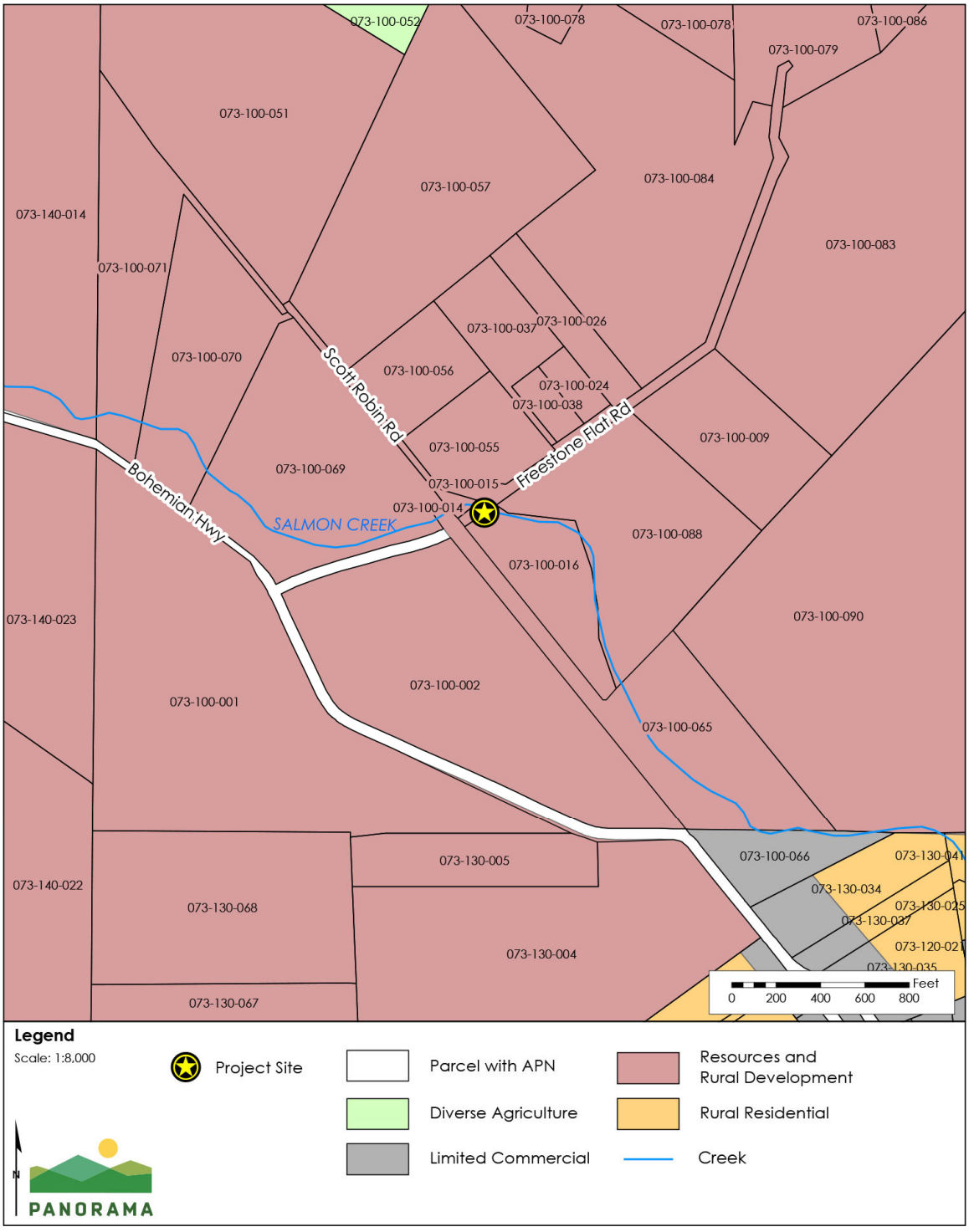
Sources: (US Geological Survey 2013 U.S. Geological Survey 2016 Tele Atlas North America, Inc 2018 USGS 2016)

Figure 2 Zoning Designations



Sources: (County of Sonoma ISD GIS Central 2001 CDF, USGS, Sonoma Ecology Center: Compiled by County of Sonoma ISD GIS Central 2003 County of Sonoma GIS Central 2019 County of Sonoma, Permit and Resource Management Department (PRMD 2012)

Figure 3 Land Use Designations



Sources: (County of Sonoma ISD GIS Central 2001 CDF, USGS, Sonoma Ecology Center: Compiled by County of Sonoma ISD GIS Central 2003 County of Sonoma GIS Central 2019 County of Sonoma, Permit and Resource Management Department (PRMD 2012)

PROJECT DESCRIPTION

Background

The existing Freestone Flat Road Bridge (Bridge No. 20C0440) is a two-span, steel-girder/truss bridge constructed in 1955. The westerly span was constructed with steel girders and a concrete deck while the easterly span consists of welded steel army modular box trusses with a steel grate deck. The existing bridge is 103 feet long and one lane wide with a clear-roadway width[1] of 12 feet. In the 2011 Structure Inventory and Appraisal Report, the existing bridge was listed as structurally deficient, making it eligible at the time for Federal Highway Administrations (FHWA) Highway Bridge Program (HBP) replacement funding (Caltrans, 2011). Corrective measures were taken to strengthen the bowing diagonal truss members of the bridge, and the latest 2014 inspection report no longer lists the bridge as structurally deficient. Nonetheless, the current 2014 sufficiency rating for the existing bridge is 48.8,[2] still making it eligible for replacement.

Need for the Project

The purpose of the project is to meet current design and safety standards for bridges and roads while minimizing the impact to Salmon Creek and the surrounding rural property. The primary objective is to replace the existing bridge with a new, wider structure. Improvements to Freestone Flat Road are needed to meet current bridge design and safety standards and accommodate current and future average daily traffic demands.

Objective

The project objective is to replace the existing Freestone Flat Road Bridge with a new bridge southeast of the existing bridge and realign Freestone Flat Road on either side of the bridge to connect with the new bridge location.

Project Design

Overview

The project includes three primary components: roadway and utility realignment, construction of a new two-lane bridge, and demolition of the existing one-lane bridge. The project would involve construction of a new parallel two-lane bridge adjacent to and downstream of the existing bridge. The existing bridge would be left in place to maintain traffic flow and access during construction. Once the new bridge is constructed, traffic would be routed onto the new bridge and the existing bridge would be removed. Photos of the existing bridge and surroundings are shown in Figure 4. Figure 5 shows the project components, including the existing bridge (proposed for removal), proposed replacement bridge, new roadway approaches, and construction staging area within the project site. Table 1 lists the footprint and impact areas associated with each of the project components.

[1] The clear-roadway width is the structural width between curbs or rails.

[2] The maximum possible sufficiency rating for a bridge is 100, representing a perfect bridge that is entirely sufficient for its current use.

Table 1 Project Footprint and Ground Disturbance Areas

Project Components	Footprint (Acres)	Area of Ground Disturbance		
		Temporary (Acres)	Permanent (Acres)	Total (Acres)
Existing Facilities and Restoration Areas				
Removal of Existing Bridge Deck	0.029	0.0 [a]	0.0	0.0
Restoration of Existing Roads and Bridge Abutments	0.0	0.169	0.0	0.169
Restoration of Existing Private Driveways	0.0	0.022	0.0	0.022
Removal of Existing Utility Poles [b]	0.0	0.0001	0.0	0.0001
Replacement Facilities				
Construction of New Bridge Deck	0.067	0.0 [a]	0.0	0.0
New Bridge Abutments	0.009	0.0	0.009	0.009
Realignment of Freestone Flat Road	0.253	0.045	0.253	0.298
Realignment of Scott Robin Road	0.106	0.0	0.106	0.106
Relocation of Utility Poles [b]	0.0004	0.081	0.0004	0.0814
Temporary Workspaces				
Construction Staging Area [c]	0.248	0.248	0.0	0.248
Temporary Work Area [c, d]	0.4579	0.4579	0.0	0.4579
Total	*1.1699*	*1.023*	*0.368*	*1.3914*

Notes:

a. The footprint of the bridge decks is limited to the area that spans the creek and is suspended in air; therefore, no temporary or permanent impacts are attributed to the decks. Temporary impact associated with access for bridge deck removal and construction is accounted for in the restoration of existing roads and abutments, and construction of new road alignments.

b. Assumes each pole has a radius of 1 foot.

c. No grading is proposed in the staging area and temporary work area; however, surface improvements, such as gravel, may be applied to the staging area and soils may be stockpiled in the staging area and temporary work area.

d. Includes area of temporary driveway realignment (refer to Freestone Flat Road realignment discussion on page 9).

Figure 4 Project Site Photographs

Freestone Flat Road at Salmon Creek – Looking Northeast.

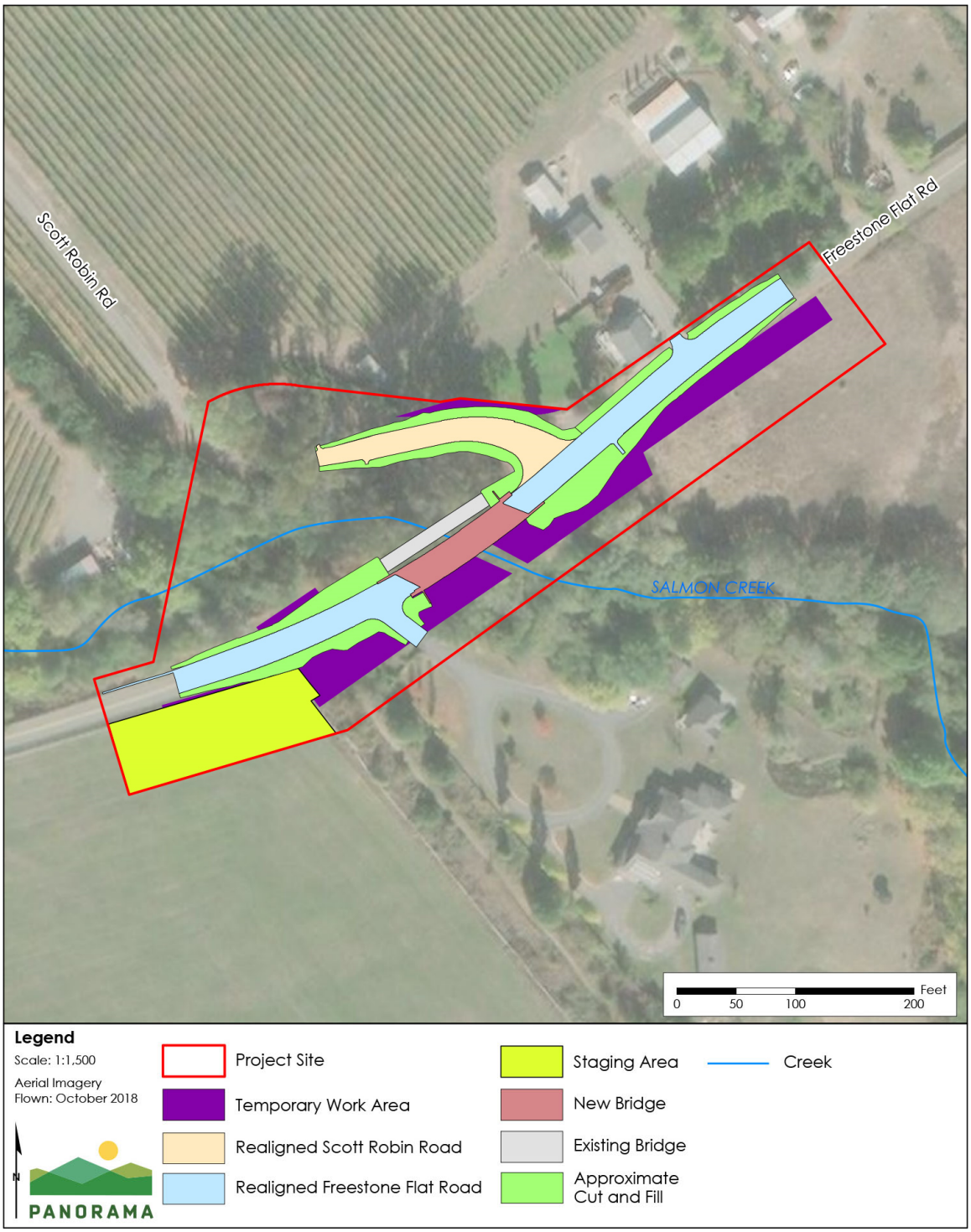
Freestone Flat Road at Salmon Creek – Looking Southwest.

Downstream from Existing Bridge – Looking Northeast.

Along Proposed Roadway Alignment to Scott Robin Road Intersection – Looking North

Source: (Quincy Engineering , 2017)

Figure 5 Project Components



Sources: (County of Sonoma ISD GIS Central, 2001; CDF, USGS, Sonoma Ecology Center: Compiled by County of Sonoma ISD GIS Central, 2003; DigitalGlobe, 2018; County of Sonoma, 2020b)

Bridge Design

The project would involve construction of a new bridge approximately 24 feet south of the existing bridge. The new bridge would be a single-span, cast-in-place, prestressed concrete box-girder bridge, as shown in Figure 6. The new bridge would be approximately 106 feet long and would fully span the creek channel. The bridge would have a total width of approximately 26 feet, composed of two 9-foot-wide lanes and 2-foot-wide shoulders, and approximately 2-foot-wide concrete bridge barriers with rails on each side of the bridge. The bridge barriers would be constructed of concrete with a galvanized tubular metal handrail mounted on top. Concrete bridge abutments would be supported on cast-in-drilled-hole (CIDH) concrete piles, which would be approximately 24 inches in diameter, with approximately 8 piles per abutment. The piles are expected to be approximately 35 to 40 feet long.

The new bridge deck would be approximately 1 to 1.5 feet higher than the existing bridge deck to smooth out the roadway profile, which climbs a few feet going eastward across the creek channel. The right-of-way (ROW) required at the new bridge location is anticipated to have a width up to 75 feet along the length of the bridge.

Roadway Realignment

Freestone Flat Road and Scott Robin Road would be realigned to connect with the new bridge location. A description of the realignment of each road is provided below. Road segments that would be replaced by realigned roads would be removed and the footprint would be restored.

Freestone Flat Road

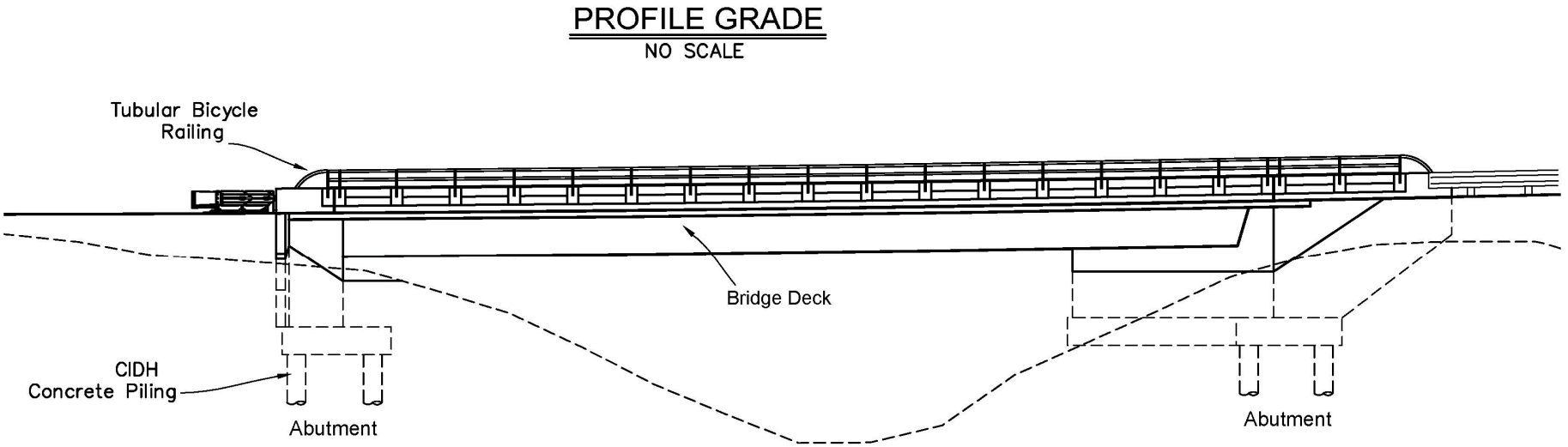
Two segments of Freestone Flat road would be realigned to meet the new bridge. Approximately 300 feet of roadway immediately east of the bridge and approximately 220 feet immediately west of the bridge would be realigned. The west end of the road realignment would introduce one 800-foot-long radius curve along Freestone Flat Road (the new bridge is set within this curve) and a second reversing radius curve 1,200 feet in length to conform to the existing roadway alignment at the east end. The vertical alignment at the bridge over Salmon Creek would be raised approximately 1.5 feet above the existing elevation to provide an improved roadway profile and conform for Freestone Flat Road. Fill slopes of up to 2:1 would be necessary on approach roads where they meet the new bridge. The private driveway to the west of the new bridge would be realigned and restored to meet the realigned Freestone Flat Road.

Scott Robin Road

Approximately 200 feet of Scott Robin Road would be improved, realigned, and elevated up to 1.5 feet to intersect with the new horizontal and vertical alignment of Freestone Flat Road. Sight distance triangles[3] would be added as necessary to ensure appropriate visibility is provided at the intersection of Scott Robin Road and Freestone Flat Road. The existing drainage culvert conveying run-off from the road and adjacent vineyards under Scott Robin Road may be replaced, if needed, with high-density polyethylene or reinforced concrete pipe and the inlet end extended.

[3] Intersection sight distance is typically defined as the distance a motorist can see approaching vehicles before their line of sight is blocked by an obstruction near the intersection. Sight distance triangles are unobstructed areas at an intersection that allow drivers to view approaching cross-traffic .

Figure 6 Box Girder Bridge



Source: (Quincy Engineering, 2022)

Project Construction

Overview

Freestone Flat Road is a dead-end road and the Freestone Flat Road Bridge provides the only access from State Route 116 for residents and agricultural operations located off of Freestone Flat Road, east of Scott Robin Road. The existing bridge and current roadway alignment would remain open during project construction. Following construction of the new bridge and road realignments, traffic would be redirected onto the new bridge allowing for the demolition of the existing bridge. Construction would occur in the following six stages, which are described in greater detail below:

1. Site Preparation and Utility Realignment
2. Bridge Construction
3. Roadway Approach Realignment
4. Approach Tie-Ins
5. Bridge Demolition and Installation of New Bridge Wingwall
6. Site Restoration

Site Preparation and Utility Realignment

Vegetation Removal

Approximately 40 trees would be removed from within the footprint of the new bridge, roadway realignments, and temporary construction workspaces (i.e., staging areas and work areas). It is anticipated that trees located within the footprint of these construction areas would be cut-off with a chainsaw at ground level and that stumps would remain in place. Tree stumps within the roadway prism or within proposed new bridge foundation locations would be completely removed after the end of the rainy season (typically October through April). All vegetation removal would be limited to the area above the ordinary high water mark.

Utility Realignment

The existing overhead electricity distribution line and telephone line supported on wooden poles adjacent and parallel to the southside of Freestone Flat Road would be relocated to accommodate the wider, realigned roadway. Vegetation would be removed along the new utility line alignment to create a 30-foot-wide clear path prior to construction. The overhead utility lines would be shifted further south and would maintain a similar offset along the south side of the realigned roadway. Utility poles would be installed using a direct bury method, which involves auguring a hole, using a crane to insert the pole into the hole, and backfilling around the pole. The utility realignment would require the use of two temporary poles to support the overhead lines during construction and the permanent relocation of three poles to support the line after construction is completed. Some tree removal and tree trimming would be required within the new utility alignment to meet distribution power line safety regulations. Vegetation, including trees, within an approximately 15-foot radius around each pole would be removed. Ground-level vegetation would be allowed to re-establish following construction; however, trees would not be permitted within the 15-foot radius of permanent poles. The relocation of the overhead line would occur prior to bridge construction to allow for adequate space for contractor access and construction equipment.

There are no known underground utilities in the project area. The contractor would contact Underground Service Alert to verify locations of underground utilities prior to starting construction.

Bridge Construction

Bridge Abutments

An excavator and/or backhoe would be used to excavate the area for the new abutment foundations, working from the top of the bank area behind the proposed abutment location. Excavated materials would be stored within the temporary work areas shown on Figure 5. A total of approximately 1,750 cubic yards would be excavated and 1,750 cubic yards of fill would be required. If excavated material satisfies backfill specifications it may be used for roadway embankment or structure backfill around the completed abutments. If the material does not satisfy backfill specifications it would be removed offsite and transported to a landfill permitted to accept the excavated material.

Drill equipment at the top of the creekbank would drill holes for the construction of cast-in-drilled-hole pilings. Excavated soils would be stored within temporary work areas. Working from the top of the creekbank, a crane would place steel reinforcing cages into the excavated holes. A concrete pump would be used to place concrete received from concrete mixer trucks parked behind the new west abutment. Baker tanks and drill slurry may be required if the CIDH piles encounter excessive water. Baker tanks, if necessary, would be placed within the temporary work area.

Footings could be formed or poured flush against the soil. Footing reinforcement would be necessary and could be installed by hand or using a prefabricated cage lowered into place using a crane. A crane may be used to facilitate erection of abutment and wingwall reinforcement and formwork. A concrete pump (possibly boom truck) could be used to pour abutment concrete.

Once the abutment concrete has cured and forms are removed, an excavator would be used to backfill native or imported soil around the abutment and wingwalls and complete the new approach embankment areas. The backfill would be compacted using rollers or hand compaction tools.

Temporary Falsework

Equipment access would be needed to reach each abutment or temporary falsework[4] support locations outside the ordinary high-water mark below the abutments. Minor grading would be needed for this access; however, no equipment or construction materials would be staged or used below the ordinary high-water mark.

Bridge construction would require temporary falsework in the creek channel (above the ordinary high-water mark). Construction would occur during the dry season, when this portion of Salmon Creek experiences a very low flow or is completely dry. Falsework would span the ordinary high-water limits. The allowable time falsework would remain in the creek channel may be subject to resource agency requirements.

Only motorized equipment (e.g., excavator, dozer) would be expected to enter the west bank and may be used for minor grading for temporary falsework footing pads. The easterly portion of the bank is too steep for equipment access; therefore, cranes would lift falsework materials to this portion of the creek. All falsework material would be removed after construction and any temporarily graded areas would be restored to the existing contours and hydroseeded.

[4] Falsework is scaffolding or other temporary structures used to support bridge construction components until construction is sufficiently advanced to allow the bridge to support itself.

New Bridge Construction

The bridge superstructure[5] would be constructed using two construction stages. First, the concrete girder stems would be formed and constructed, and once the concrete is cured, the concrete deck would be constructed. Concrete construction consists of erecting plywood formwork, placing reinforcing steel and casting the concrete. Cranes, generators, air compressors, and concrete pumps (boom trucks) would facilitate the concrete construction of the bridge. Concrete would be delivered to the west approach and would be achieved without roadway closures. Several construction operations may require brief roadway closures of 15 minutes or less, requiring signage and flagmen.

After the deck concrete has cured and reached the specified strength, the span would be prestressed with high strength steel cables. Equipment required for this work is typically suspended from the deck and contained within the areas adjacent to the bridge ends. Prestressing operations would not require road closures.

With the span released from the temporary falsework, the concrete bridge railing would be constructed directly onto the bridge. Rebar would be installed into the bridge deck, plywood/steel forms would be built, and the concrete barrier would be cast. The railing construction work would be completed using materials and equipment placed within the new roadway staging areas or on the new bridge deck. This work would not require any traffic closures.

Drainage

The proposed Project has been designed to comply with the Sonoma County Flood Management Design Manual for the 100-year design discharge and Low Impact Development (LID) requirements identified by the City of Santa Rosa Low Impact Development Technical Design Manual and City of Santa Rosa Storm Water Calculator (City of Santa Rosa, 2021; Sonoma County, 2020). The project will utilize dikes and superelevation to capture stormwater runoff for all new and reconstructed pavement area. Flows will be directed to four different bioretention basins consisting of biofiltration media underlain with class 2 permeable base and a 6-inch diameter perforated pipe underdrains (Quincy Engineering, 2022).

~~The existing drainage patterns along Freestone Flat Road and Scott Robin Road would be maintained. Currently drainage runoff sheet flows from the roadways into shallow and flat roadside ditches.~~ An existing drainage pipe under Scott Robin Road relieves water from the north side and outfalls along the northern embankment of Salmon Creek. The project may include improvements (if necessary) to replace the existing drainage pipe (with high-density polyethylene or reinforced concrete pipe) and extend the inlet end while maintaining the existing outfall location. ~~The gradient for drainage of roadway and bridge surfaces near Salmon Creek would be sufficient to maintain current patterns and flow away from the roadway and bridge along their natural course.~~

Roadway Approach Realignment

Freestone Flat Road and Scott Robin Road would be realigned to meet the new bridge location. Roadway grading and embankment fill in order to conform to the new abutments would be necessary. The roadway structural section would consist of aggregate base overtopped with asphalt concrete.

Metal beam guard rails and crash cushions would be installed and connect to the concrete bridge barriers near the wingwall locations.

A private driveway with an entrance gate, fencing, and stone pillars is located near the west end of the

[5] The part of the bridge structure that supports traffic, including the bridge deck and rails.

proposed bridge, near the staging area that would be used throughout construction of the project. Approximately 80 feet of driveway nearest to the roadway would be temporarily re-rerouted to create separation between the property owner access and construction operations at the new bridge location. The temporary driveway would be approximately 15 feet wide and constructed of aggregate base rock. The temporary driveway realignment is expected to be approximately 80 feet in length and would fall within the footprint of the future location of the realigned Freestone Flat Road.

Approach Tie-ins

Materials and equipment would be removed from the new bridge and approaches and the completed portions of the new roadway and southern portion of the new bridge deck would be temporarily delineated and prepared to receive one lane of traffic.

Signage, delineators, and temporary striping would be added in preparation of moving traffic onto the new alignment. Flagmen would be used as needed to close the existing approach roadways (for 15 minutes or less) and switch the one-lane traffic onto the new bridge. One-lane traffic control may be switched to the new bridge as the Scott Robin Road intersection is graded up to the new roadway profile.

The existing asphalt would be removed, and a new road base and asphalt surface would be placed on the remaining portions of the new roadway. Typical paving equipment would be used, including dump trucks, a paver, and compaction rollers. Signage and flagmen would be used to facilitate roadway closures. Traffic would still be in a one-lane, stop-controlled configuration for completion of this stage.

Bridge Demolition and Installation of New Bridge Wingwall

After traffic on Freestone Flat Road is switched onto the new bridge, the remaining portions of the existing approaches would be used as staging areas for demolition of the existing steel girder and steel truss bridge. A single large crane could be staged at the existing west approach or two smaller cranes could be used (one on the west and one on the east) for removal of the existing two spans. The truss would be disassembled and trucked away for disposal or salvage, along with all other portions of the existing bridge.

Generators, excavators, air compressors, and cranes could then be used to remove the existing pier columns, abutments, and remaining portions of metal wingwalls from within the existing approach roadways. Existing abutment piles may be cut off below grade and remain in place. The existing pier columns would be cut off at the ordinary high-water elevation in Salmon Creek and remain in place. Abutment piles that are above the ordinary high-water elevation would be removed entirely. Removal activities would not require access below the Salmon Creek ordinary high-water elevation. No traffic disruptions are anticipated for demolition operations. Disposal of the existing steel truss bridge would be coordinated with the County as the County may want to salvage portions of the existing bridge for maintenance of other bridges they own.

Once the existing bridge is removed, the new northeast wingwall and final abutment grading in the top bank portion of the channel can be completed. Some grading equipment would enter the upper creek bank area around the new northeast wingwall. No rock slope protection is anticipated for the abutments.

The small remaining portion of the east bridge wingwall would be constructed and remaining hardware (e.g., metal beam guardrails) would be installed. Final asphalt paving and striping would complete the heavy construction work. Signage and flagmen would be used to facilitate removal of temporary striping and traffic devices so the roadway can be converted to the final two-lane configuration.

Site Restoration

All construction equipment, materials, and debris would be removed from the project site once traffic is in

the final two-lane configuration. Exposed slopes would be hydroseeded, and other plantings could be installed. Gates and mailboxes for private residences would be reinstalled as necessary.

Other Construction Elements

Dust Control

The project would temporarily disturb up to 1.023 acres (Table 1). Water would be used for dust control throughout construction. Up to 78,000 gallons of water may be needed throughout the construction period for dust-control purposes. Water would be acquired from an existing source and trucked to the project site.

Staging Areas

A staging area would be used to store project materials and equipment. The staging area would be approximately 12,600 square feet. The staging area footprint is shown in Figure 5. Perimeter fencing would be temporarily installed around the staging area and a large storage trailer may be installed on-site. Depending on contractor operations and access requirements, the contractor may require temporary gravel within the temporary work areas and staging areas. Following construction, the temporary work areas and staging areas would be returned to pre-construction conditions.

Traffic Control

No detours to avoid the construction area are available on existing County roads; therefore, traffic through the site during construction would be maintained. The proposed bridge over Salmon Creek and road realignments would be constructed while traffic is maintained on the existing one-lane bridge. Temporary traffic lane shifts and one-lane traffic control with flagging would be implemented for approach roadway construction where the new roadway alignment overlaps with existing roadway.

Signage, intermittent flagmen, and temporary K-rails and crash cushions would be used to separate traffic on the existing roadway from the new alignment to the south during bridge construction operations. Temporary shoring, possibly drilled soldier piling, may be used to separate the existing roadway from the abutment excavation areas. If used, the soldier piles would extend through shallow soils at the east and west abutments and penetrate 1 to 2 feet into bedrock. The west abutment area may require deeper solider piles drilled into soils for stability. The temporary shoring systems would be placed away from the creek bottom, located higher on the banks near the abutments. At both abutments, installation equipment would be located south of the existing approach roadways within the temporary work area and would avoid the creek channel. ~~Signage, flagmen, and temporary K-rails would be used to maintain traffic during sheet pile driving operations.~~

Construction Personnel, Equipment, and Schedule

The type of equipment required for the project would include, but not be limited to the following:

- Excavator or Backhoe
- Tractor Trailer
- Drilling Equipment
- Crane
- Concrete Pump/Boom Truck
- Loader
- Roller/Sheep's Foot
- Plate Tamper/Wacker/Ram
- Pick-Up Trucks
- Tractor Trailer
- Dump Trucks
- Street Sweepers
- Generators
- Air Compressors
- Telescopic Forklift
- Cutting Torch
- Circular Saw
- Drill/Auger

- Water Trucks
- Thermoplastic Applicator
- Grinder
- Dozer

A typical crew size of 6 to 8 workers would be required for the project. During pile and rebar installation, the crew size could be as high as 20. Crew members would most likely live in and commute from the local region.

Project construction would likely begin in the Spring of 2022. Project construction would occur over approximately 6 to 8 months. Work would typically occur during daylight hours, 5 days per week; however, longer shifts and 6-day weeks may be necessary to maintain schedule.

Ground-disturbing activities adjacent to Salmon Creek would be conducted between April 15 and October 31 when flow within the creek would be minimal. The anticipated construction schedule is provided in Table 2. The construction schedule is dependent on agency permits and approvals and may be modified based on agency permits and approvals for the project.

Table 2 Construction Schedule

Construction Phase	Average Number of Workers	Duration (Working Days)	Timing
Tree removal	4	15	January 2022
Site preparation and utility relocation	6	15	April 2022
Bridge construction, including bridge abutments, falsework and span	8	120	May to October 2022
Freestone Flat Road and Scott Robin Road realignment	6	32	October to November 2022
Demolition of existing bridge	4	10	October 2022
Site Restoration	2	10	October 2022

OTHER PUBLIC AGENCIES WITH APPROVAL AUTHORITY

The project may require permits and approvals prior to construction. Permits and approvals currently anticipated to be required for the project are listed in Table 3.

Table 3 Possible Required Permits and Approvals

Permit or Approval	Agency	Function
Section 1602 Streambed Alteration Agreement	California Department of Fish and Wildlife	Deposition or disposal of material into any river, stream, or lake
National Pollutant Discharge Elimination System Construction General Permit	Regional Water Quality Control Board	Discharge of stormwater or sediments from construction activities

Waste Discharge Requirements (WDRs) or Categorical Waiver of WDRs	Regional Water Quality Control Board	Discharge of sediment into waters of the state

EVALUATION OF ENVIRONMENTAL IMPACTS

Overview

This IS includes analyses of the environmental resource topics listed below and the mandatory findings of significance that would result from changes in baseline physical conditions as a consequence of the project. These issue areas incorporate the topics presented in CEQA's Environmental Checklist (identified in Appendix G of the CEQA Guidelines). Sonoma County will use the analysis in this section to identify any specific impact criteria.

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

The new bridge and associated roadway improvements would not increase use of or vehicles speeds on Freestone Flat Road, nor would the project result in vehicle access to locations previously inaccessible. Operation of the project would be consistent with pre-construction conditions and no impact would occur; therefore, the analyses below do not include a discussion of operation impacts. The analyses consider construction impacts of the entire action involved, including off-site as well as on-site, cumulative as well as project-level, and direct as well as indirect impacts. Impacts to each environmental resource topic are given one of the following determinations:

> **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.
>
> **Less Than Significant with Mitigation.** 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.
>
> **Significant and Unavoidable Impact.** The project would have the impact described, and the impact could be significant. The impact cannot be reduced to a less-than-significant level by incorporating mitigation measures. An environmental impact report must be prepared for this project.

Each question on the checklist was answered by evaluating the project as proposed, that is, without considering the effect of any added mitigation measures. The checklist includes a discussion of the impacts

and mitigation measures that have been identified.

The Sonoma County Department of Transportation and Public Works has agreed to accept all mitigation measures listed in this checklist as conditions of approval of the project and to obtain all necessary permits.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by the project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agricultural and Forestry Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Energy
☒ Geology and Soils	☐ Greenhouse Gas Emissions	☒ Hazards and Hazardous Materials
☒ Hydrology and Water Quality	☐ Land Use and Planning	☐ Mineral Resources
☒ Noise	☐ Population and Housing	☐ Public Services
☐ Recreation	☒ Transportation	☒ Tribal Cultural Resources
☒ Utilities and Service Systems	☐ Wildfire	☒ Mandatory Findings of Significance

Impacts Assessment

Aesthetics

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
B) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
C) In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? In urbanized areas, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
D) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

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

No Impact. The project site is located within the 22,400-acre Salmon Creek Watershed. No designated scenic vistas that afford a view of the project site occur in the project vicinity. The project site is not located within a designated scenic vista. No impact would occur.

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

No Impact. No existing or eligible state scenic highways that afford a view of the project site occur in the project vicinity. The project site is located approximately 5 miles from California State Route 116, which is the nearest state-designated scenic highway. The project would not damage scenic resources such as trees, rock outcroppings, and historic buildings within a state scenic highway. No impact would occur.

C) In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? In urbanized areas, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less Than Significant Impact. Visual impacts were evaluated using the Sonoma County Visual Assessment Guidelines (VA Guidelines) (County of Sonoma, 2019). The visual sensitivity of the project site may be given a rating of low, moderate, high, or maximum using the criteria specified in the VA Guidelines. The visual dominance of the project is determined comparing the contrast of the VA

Guideline's elements, or characteristics, of the project with its surroundings and giving a rating of inevident, subordinate, co-dominant, or dominant. 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.

Visual Sensitivity

The project site is not a designated state scenic highway, nor is it designated by the County of Sonoma as being a scenic resource (i.e., community separator, scenic landscape unit, or scenic corridor). In addition, the bridge has no County Landmark status, nor any federal or state historic listing status. There are no public parks or public trails from which the bridge can be viewed. Although private views are not considered, it is worth noting that the bridge is not visible from any private residences due to dense vegetation along Salmon Creek. Public views of the project site from Freestone Flat Road are relatively of short duration due to the short length of the road, turns in the road, and intervening vegetation (see Figure 7, Figure 8, and Figure 9). Viewers familiar with the current road condition would likely have a low sensitivity to changes that result from modifications to its setting. Sonoma County definitions of visual sensitivity are provided in Table 4. The site is not located in an urban area and contains natural vegetation of aesthetic value; therefore, the project site is characterized as having a *moderate* sensitivity based on the VA Guidelines.

Table 4 Sonoma County Site Sensitivity Characteristics

Sensitivity	Characteristics
Low	The site is within an urban land use designation and has no land use or zoning designations protecting scenic resources. The project vicinity is characterized by urban development or the site is surrounded by urban zoning designations and has no historic character and is not a gateway to a community. The project site terrain has visible slopes less than 20 percent and is not on a prominent ridgeline and has no significant natural vegetation of aesthetic value to the surrounding community.
Moderate	The site or portion thereof is within a rural land use designation or an urban designation that does not meet the criteria above for low sensitivity, but the site has no land use or zoning designations protecting scenic resources. The project vicinity is characterized by rural or urban development but may include historic resources or be considered a gateway to a community. This category includes building or construction sites with visible slopes less than 30 percent or where there is significant natural features of aesthetic value that is visible from public roads or public use areas (i.e. parks, trails etc.).
High	The site or any portion thereof is within a land use or zoning designation protecting scenic or natural resources, such as General Plan designated scenic landscape units, coastal zone, community separators, or scenic corridors. The site vicinity is generally characterized by the natural setting and forms a scenic backdrop for the community or scenic corridor. This category includes building and construction areas within the SR designation located on prominent hilltops, visible slopes less than 40 percent or where there are significant natural features of aesthetic value that are visible from public roads or public use areas (i.e. parks, trails etc.). This category also includes building or construction sites on prominent ridgelines that may not be designated as scenic resources but are visible from a designated scenic corridor.

Sensitivity	Characteristics
Maximum	The site or any portion thereof is within a land use or zoning designation protecting scenic resources, such as General Plan designated scenic landscape units, coastal zone, community separators, or scenic corridors. The site vicinity is generally characterized by the natural setting and forms a scenic backdrop for a designated scenic corridor. This category includes building or construction sites within the scenic resource designation on or near prominent ridgelines, visible slopes greater than 40 percent or where there are significant natural features of aesthetic value that are visible from a designated scenic corridor.

Source: (County of Sonoma, 2019)

Figure 7 View of Freestone Flat Road at Scott Robin Road Looking Southwest

Figure 8 View of Freestone Flat Road Looking Northeast

Figure 9 View of Freestone Flat Road at Scott Robin Road Looking North

Visual Dominance

The visual dominance of the project is determined by comparing the contrast of the following elements or characteristics of the project with its surroundings and giving a rating of inevident, subordinate, co-dominant, or dominant:

- Form: shape, geometry, complexity.
- Line: the edge of the shape, boldness, complexity of silhouette, orientation.
- Color: reflectivity, hue (actual color), value (dark or light)
- Texture: surface characteristics, randomness, grain (fine or coarse)
- Night Lighting

Existing conditions within the project area are shown in see Figure 7, Figure 8, and Figure 9. Construction activities would result in short-term changes to the visual dominance in the project area. Construction is anticipated to take approximately 6 to 8 months, during which time following activities and equipment may be seen in the project vicinity during construction:

- Work crews accessing the project site
- Establishment and use of a staging area, which would include temporary perimeter fencing and a large temporary storage trailer
- Removal of vegetation from the proposed roadway realignment and work areas

- Large pieces of equipment used for moving earth; trenching ditches; transporting, lifting, and placing equipment; hauling concrete; spraying water to control dust; and other construction activities
- Grading activities related to construction of the proposed road alignment
- Formwork associated with construction of bridge abutments
- Disassembling and removal of the existing bridge
- Reclamation of the existing Freestone Flat Road, Scott Robin Road, and areas of temporary disturbance

The existing Freestone Flat Road Bridge is a part of the visual character of the area. After construction of the new bridge is complete, the existing bridge would be disassembled, and only the new bridge would remain in the area.

The new bridge would be prominent among the visual landscape following construction. The new bridge would change the character of the area by replacing the existing wood and steel truss bridge with the new concrete bridge; however, the form, line, color and texture of the new bridge would be compatible with the surrounding infrastructure. Consistent with existing conditions, no lighting would be installed along the new bridge. The new bridge would appear more prominent due to the absence of vegetation within the construction impact area and footprint of the existing bridge. Approximately 40 trees would be removed from the new bridge location and realigned roadway. Bare ground and sparse vegetation would be visible in the footprint of the removed road segments and old bridge location, causing a contrast with nearby dense vegetation. Bare ground would be revegetated via hydroseeding using a native seed mix and the majority of cut trees would be expected to re-grow from the stumps, which would be left in place. It is possible that disturbed areas would not revegetate to pre-construction conditions, particularly in areas that were previously within the footprint of the existing bridge footings and road segments. If the site does not revegetate to pre-construction conditions, the visual dominance of the project would be *co-dominant*, meaning the new bridge and surrounding area is prominent within the setting but attract attention equally with other landscape features. Table 5 identifies the Sonoma County impact thresholds of significance and determines that a visually co-dominant project in an area of moderate sensitivity would have a less than significant impact. No mitigation is necessary.

Table 5 Sonoma County Thresholds of Significance for Visual Impact Analysis

Sensitivity	Dominant	Co-Dominant	Subordinate	Subordinate
Maximum	Significant	Significant	Significant	Less than Significant
High	Significant	Significant	Less than Significant	Less than Significant
Moderate	Significant	Less than Significant	Less than Significant	Less than Significant
Low	Less than Significant	Less than Significant	Less than Significant	Less than Significant

Source: (County of Sonoma, 2019)

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

No Impact. Construction would occur during daylight hours. Artificial lighting would not be used during construction. Post-construction conditions within the project area would be the same as existing conditions. No streetlights or other artificial lighting would occur. The new bridge would be constructed of non-reflective material. Handrails would be constructed using galvanized steel, which does not produce glare. The project would not result in substantial light or glare

Agriculture and Forest Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?	☐	☐	☒	☐
B) Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☒	☐
C) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined in Public Resource Code section 4526), or timberland zoned Timberland Production (as defined in Government Code section 51104 (g))?	☐	☐	☐	☒
D) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☒	☐
E) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

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 nonagricultural use?

Less than Significant Impact. A staging area would temporarily convert 0.25 acre of prime farmland during construction activities. Staging activities would not affect the future agricultural use of the area and the staging area would be returned to pre-construction conditions following construction.

Construction of the realigned Freestone Flat Road would permanently convert approximately 0.042 acre of prime farmland. The converted land is adjacent to the existing road and not currently used for agricultural or farming purposes. In 2012, the California Department of Conservation, Division of Land and Resource Protection mapped approximately 29,882 acres of prime farmland within Sonoma County (California Department of Conservation, 2015). The conversion of approximately 0.042 acre of designated prime farmland would be negligible and the impact would be less than significant.

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

Less than Significant Impact. There are no Williamson Act contracts within the project area. The nearest Williamson Act contract land is located approximately 983 feet north of the project site (CDC, 2013). No construction would occur on Williamson Act contract land and the project would have no impact.

The Sonoma County General Plan indicates the area is zoned as Resources and Rural Development with a Riparian Corridor Combining Zone overlay (refer to Figure 2). The Riparian Corridor Combining Zone applies to land that borders Salmon Creek and restricts agricultural activities within 25 feet of the upper creek bank. Agricultural uses are permitted within land zoned as Resources and Rural Development. Construction of the new bridge and realigned roadway would not conflict with the Resources and Rural Development zoning and the project would have no impact.

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

No Impact. Neither the project site nor the immediately adjacent lands are zoned for forest land as defined by Public Resources Code Section 12220(g), timberland as defined by Public Resources Code Section 4526, or Timberland Production as defined by Government Code Section 51104(g) (Sonoma County, 2008). The project would not conflict with zoning for forest land, timberland, or Timberland Production. No impact would occur.

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

Less Than Significant. Forest land is defined in the Public Resources Code as, "land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits." The project would impact a total of 0.206 acre (0.185 acre temporary impact and 0.021 acre permanent impact) of riparian habitat that meets the definition of forestland. Permanent impacts of the new bridge and road footprint would total 0.021 acre and would not be a substantial loss of forest land when compared to the abundance of riparian forest that occurs adjacent to the project site. The impact is less than significant.

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

No Impact. The project would replace the existing Freestone Flat Road Bridge over Salmon Creek. The

project would impact farmland as discussed in Impact A) and forest land as discussed in Impact D) above; however, the project does not involve any land use changes and would not change the designated land use of the project area or surrounding areas. The project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. No impact would occur.

Air Quality

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
B) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal, state, or regional ambient air quality standard?	☐	☒	☐	☐
C) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
D) Result in substantial emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

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

Less than Significant Impact. The 2017 Clean Air Plan (2017 CAP) is the only applicable air quality plan that applies to the project area. Pursuant to CEQA Guidelines, the project would conflict with or obstruct the 2017 CAP if (1) the project were inconsistent with the control measures defined in the CAP, and/or (2) implementation of the project would generate criteria pollutants or toxic air contaminants that exceed the numerical thresholds defined by the Bay Area Air Quality Management District (BAAQMD) to attain the goals and objectives of the 2017 CAP.

The 2017 CAP includes 85 control measures categorized into nine economic sectors including transportation, energy, agriculture, and natural and working lands (BAAQMD, 2017). Several transportation control measures pertain to construction activities including heavy equipment use, such as providing incentives to promote ridesharing (TR8) and purchasing new trucks that exceed nitrogen oxide (NOx) emission standards, hybrid trucks, or zero-emission trucks (TR19).

The pertinent transportation control measures are voluntary incentive measures that do not require vehicle upgrades or retrofits. The project would not require purchase of any vehicles or equipment. The project use of construction vehicles and equipment would not conflict with these programs and would not conflict with or obstruct implementation of the control measures identified to achieve the goals of the 2017 CAP. No conflict with the 2017 CAP transportation control measures would occur.

Estimated combustion emissions during construction of the project would not exceed the numerical significance thresholds prepared by BAAQMD, as further discussed under Impact B). The impact would be less than significant.

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

Less Than Significant with Mitigation. The project site is located in the San Francisco Bay Area Air Basin (SFBAAB) under the jurisdiction of the BAAQMD. The SFBAAB is designated as a nonattainment area for ozone and fine particulate matter ($PM_{2.5}$) under both National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). The SFBAAB is also designated as nonattainment for coarse particulate matter (PM_{10}) under CAAQS, but not NAAQS. The project could have a cumulatively considerable impact on air quality if it either (1) resulted in emissions above the significance thresholds or (2) violated any action in an attainment plan.

BAAQMD prepared the 2001 Ozone Attainment Plan to reduce ozone-forming emissions in the SFBAAB to achieve attainment of NAAQS and CAAQS ozone standards (BAAQMD, 2001). BAAQMD thresholds for ozone precursor pollutants (ROGs and NO_X) and particulate matter (PM_{10} and $PM_{2.5}$) are the thresholds at which a project would be considered to have a cumulatively considerable net increase of any criteria pollutant for which the region is nonattainment.

Operation of vehicles and equipment during project construction would emit diesel particulate matter and other criteria air pollutants. Construction would occur over approximately 6 to 8 months and is assumed to start in January 2022. Construction emissions for the project were calculated using CalEEMod [6] version 2016.3.2 based on the estimated construction schedule and anticipated equipment use for project construction. The air quality model emissions calculations are provided in Appendix D. Table 6 shows the estimated unmitigated average daily emissions for construction. The emissions generated during the construction would not exceed the BAAQMD significance thresholds for particulate matter (PM_{10} and $PM_{2.5}$) and ROGs or NO_X or other ozone precursors. BAAQMD does not set numerical thresholds for fugitive dust generated during construction; however, BAAQMD requires implementation of Best Management Practices (BMPs) to control fugitive dust. Fugitive dust emissions generated during construction have the potential to contribute to an existing air quality violation and result in a significant impact. Mitigation Measure AIR-1 requires implementation of fugitive dust control measures to minimize fugitive dust generation during construction. The impact from violation of an air quality standard or contribution to an existing air quality violation would be less than significant with mitigation.

[6] The California Emissions Estimator Model (CalEEMod) is a statewide land use emissions computer model used to quantify potential criteria pollutant and greenhouse gas emissions associated with both construction and operations from a variety of land use projects.

Table 6 Unmitigated Construction Emissions

Year	Estimated Average Daily Pollutant Emissions (pounds/day)					
	Reactive Organic Gases (ROG)	Nitrogen Oxides (NOx)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Fine Particulate Matter (PM_{10})	Coarse Particulate Matter ($PM_{2.5}$)
2022	1.6	15.5	15.9	0.0	0.7	0.7
BAAQMD Emissions Threshold	54	54	--	--	82 (exhaust only)	54 (exhaust only)
Threshold Exceeded?	No	No	--	--	No	No

Mitigation Measure AIR-1: Dust and Engine Emissions Control Measures

The County or their contractor shall implement the following dust and engine emissions control measures during construction:

8. Water or dust palliatives shall be applied to all exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) and other surfaces that could give rise to airborne dust as needed to control dust.
9. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
10. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers or other effective method as necessary to control project-related dust on public roads. The use of dry power sweeping is prohibited.
11. All vehicle speeds on unpaved roads shall be limited to 15 mph.
12. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
13. Construction equipment will be properly maintained by a certified mechanic.
14. Post a publicly visible sign at work areas where grading activities occur near public and residential areas with the telephone number and person to contact at the County regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

C) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Sensitive receptors are typically defined as the segment of the population most susceptible to air quality effects including children, the elderly, and the sick, as well as land uses such as schools, hospitals, parks, and residential communities. Five residences are located with 1,000 feet from the project site. The nearest sensitive receptor to the project site is approximately 20 feet away from the closest proposed construction along Freestone Flat Road and 220 feet from the center of the existing bridge. During project construction, localized air emissions of criteria constituents would be generated from construction vehicles and equipment powered by internal combustion engines as well as from earth moving activities. Operation of diesel-powered equipment would generate diesel exhaust emissions, a toxic air contaminant.

While sensitive receptors near the project site may be exposed to contaminants, construction activities would occur for up to 8 months, which is substantially lower than the 30- or 90-year exposure period typically associated with chronic cancer health risks (OEHHA, 2015). In addition, particulate matter emissions decrease dramatically as a function of distance from the source. Although receptors are located close to the project site, most of the construction activities would involve the bridge and would occur at least 150 feet away from any one receptors. Project-related construction activities and associated emissions would be short-term and relatively minor. Exhaust emissions would disperse rapidly from the project site and would not substantially impact the nearest sensitive receptors. As such, the project would not expose sensitive receptors to substantial pollutant concentrations and the impact would be less than significant.

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

Less Than Significant Impact. Diesel equipment used during project construction may emit objectionable odors associated with combustion of diesel fuel. Diesel emissions, however, would dissipate rapidly and would be temporary and intermittent in nature. Odor impacts associated with diesel combustion during construction activities would be less than significant.

Biological Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	☐	☒	☐	☐
B) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	☐	☒	☐	☐
C) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒

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

Discussion

Special-Status Species

Definition

Special-status species include:

- Species listed as endangered, threatened, rare, or proposed for listing by USFWS and CDFW,
- Species with a California Native Plant Society (CNPS) California Rare Plant Rank of 1 or 2, and
- Migratory and nesting birds protected under the Migratory Bird Treaty Act and California Fish and Game Code.

Literature Review

The following plant and wildlife agency databases were reviewed to determine the potential for special-status plant and wildlife species to occur in the Biological Study Area (BSA):

- USFWS Information for Planning and Consultation (USFWS, 2019)
- National Marine Fisheries Service (NMFS) November 2016 occurrence records for the Camp Meeker California USGS 7.5-minute topographic quadrangle (NMFS, 2016)
- CNDDB occurrence records for list of special-status species known to occur within 5 miles of the project site (CDFW, 2019)
- CNPS database of California Rare Plant Rank (CRPR) 1 and 2 species with potential to occur within the Camp Meeker California USGS 7.5-minute topographic quadrangle (CNPS, 2019)

Special-status species identified from the database review are listed in Table 7. Species were determined to have potential to occur if suitable habitat is present in the BSA.

Table 7 Potential for Special-Status Species to Occur in the BSA

Common Name	Scientific Name	Status	General Habitat	Habitat Present?	Potential to Occur and Rationale
INSECTS					
Myrtle's Silverspot Butterfly	*Speyeria zerene myrtleae*	FE	Myrtle's silverspot butterflies are typically found in coastal dunes, prairies and scrublands up to 1000 feet above sea level and as far as 3 miles inland.	A	**None.** No suitable habitat in the BSA.
San Bruno Elfin Butterfly	*Callophrys mossii bayensis*	FE	San Bruno Elfin butterflies inhabit rocky outcrops and cliffs in coastal shrub on the San Francisco Peninsula.	A	**None.** No suitable habitat in the BSA.
CRUSTACEANS					
California Freshwater Shrimp	*Syncaris pacifica*	FE, SE	Found in low elevation, low gradient streams with moderate to heavy riparian cover, in shallow pools away from main stream-flow. California freshwater shrimp can be found in under-cut banks with exposed roots during winter, and can be found in leafy branches touching water during summer.	HP	**Moderately likely to occur**. Most of the BSA lacks vegetation near the water, but there are some undercut banks within the BSA that could provide suitable habitat for California freshwater shrimp. The shrimp is known to occur in Salmon Creek downstream of the BSA.
FISHES					
CCC Coho Salmon	*Oncorhynchus kisutch*	FE, SE	Federal endangered listing includes all naturally spawned populations of Coho salmon from the Punta Gorda in Northern California south to the San Lorenzo River in Central California. Require beds of loose, silt-free,	CH, HP	**Moderately likely to occur**. Coho are known to use Salmon Creek.

Common Name	Scientific Name	Status	General Habitat	Habitat Present?	Potential to Occur and Rationale
			coarse gravel for spawning and need cover, cool water and ample dissolved oxygen. Critical habitat designation includes all accessible river reaches in Sonoma County. Salmon Creek in the BSA is accessible and is therefore critical habitat.		Salmon Creek is designated critical habitat for this species. Salmon Creek is a migration corridor and could potentially be a nursery or spawning site.
California Coast Chinook	*Oncorhynchus tshawytscha*	FT	Naturally spawned Chinook salmon originating from rivers and streams south of the Klamath River to and including the Russian River. Critical habitat designated to include all river reaches and estuarine areas accessible to listed chinook salmon from Redwood Creek (Humboldt County, California) to the Russian River (Sonoma County, California). Salmon Creek in the BSA is not accessible and does not meet the criteria for critical habitat; therefore, the project site is not within a mapped critical habitat for California Coast Chinook.	A	**None**. Salmon Creek is not known to support CC Chinook salmon. The species was not observed in Salmon Creek during field surveys
CCC Steelhead	*Oncorhynchus mykiss (irideus)*	FT	Federal threatened listing includes all naturally spawned anadromous steelhead below natural and manmade impassable barriers in coastal basins from Russian River in Sonoma County to Soquel Creek in Santa Cruz County.	CH, HP, P	**Present**. Coastal steelhead are known to use Salmon Creek for migration and spawning.

Common Name	Scientific Name	Status	General Habitat	Habitat Present?	Potential to Occur and Rationale
			Critical habitat is designated to include all river reaches and estuarine areas accessible to listed steelhead in costal river basins from the Russian River to Aptos Creek, California, and the drainages of San Francisco and San Pablo Bays. Salmon Creek in BSA is accessible.		The project area is within designated critical habitat – Bodega Hydrologic Unit. The species was observed by County biologists during field surveys.
Tidewater Goby	*Eucyclogobius newberryi*	FE	Found primarily in waters of coastal lagoons, estuaries, and marshes. Tidewater gobies live only in California, and historically ranged from Tillas Slough (mouth of the Smith River, Del Norte County) to Agua Hedionda Lagoon (northern San Diego County).	A	**None.** No suitable habitat in the BSA.
AMPHIBIANS AND REPTILES					
California Red-Legged Frog	*Rana draytonii*	FT	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development. Must have access to estivation habitat.	HP	**Moderately likely to occur**. Wetted channel may provide marginal summer holding habitat and serve as a migratory corridor. Upland areas within the BSA could be used for estivation, no breeding habitat is present in the BSA due to lack of deep water and emergent vegetation.
California Giant Salamander	*Dicamptodon ensatus*	SSC	Occur primarily in humid coastal forests, especially in Douglas fir, redwood, red fir, and montane and valley-foothill riparian habitats.	A	**None.** No suitable habitat in the BSA.

Common Name	Scientific Name	Status	General Habitat	Habitat Present?	Potential to Occur and Rationale
Foothill Yellow-Legged Frog	*Rana boylii*	FC	Found in or near rocky streams and rivers. Adults often bask on exposed rock surfaces near streams, and when disturbed will dive into the water and take refuge under submerged rocks or sediments. The species is rarely encountered far from a permanent water source.	HP	**Low likelihood to occur**. The abundant pools and shallow riffles with coarse rock and small boulders found within the BSA provide suitable habitat for this species; however, Salmon Creek is not a permanent water source and the nearest occurrence of foothill yellow-legged frog is 3 miles from the project area.
Green Sea Turtle	*Chelonia mydas*	FT	Found near the coastline and around islands and live in bays and protected shores, especially in areas with seagrass beds.	A	**None.** No suitable habitat in the BSA.
Western Pond Turtle	*Actinemys marmorata*	FC	This species lives in streams, ponds, lakes, and permanent and ephemeral wetlands.	HP	**Moderately likely to occur.** The BSA provides suitable habitat for the species. Observations of western pond turtle have been reported in a small farm pond along Salmon Creek 0.6 mile away from the Town of Bodega, approximately 5 miles southwest of the project site.

Common Name	Scientific Name	Status	General Habitat	Habitat Present?	Potential to Occur and Rationale
BIRDS					
Burrowing Owl	*Athene cunicularia*	BCC	Burrowing owls live in open, treeless areas with low, sparse vegetation, usually on gently sloping terrain. They can be found in grasslands, deserts, and steppe environments; on pastures, agricultural fields, and road embankments.	A	**None.** The BSA includes dense vegetative cover along the creek banks and Freestone Flat Road, non-native grassland, and developed land; therefore, there is no suitable habitat in the BSA.
Marbled Murrelet	*Brachyramphus marmoratus*	FT	Generally found in calm protected waters near coast, as in bays, inlets, among islands. Sometimes found on lakes near coast. Breeds inland on mountains near coast.	A	**None.** No suitable habitat in the BSA.
Northern Spotted Owl	*Strix occidentalis caurina*	FT	Live in forests characterized by dense canopy closure of mature and old-growth trees, abundant logs, standing snags, and live trees with broken tops.	A	**None.** No suitable habitat in the BSA.
Tricolored Blackbird	*Agelaius tricolor*	BCC, ST	Found in cattail or tule marshes; forages in fields, farms. Breeds in large freshwater marshes, in dense stands of cattails or bulrushes. At all seasons, including when breeding, does most of its foraging in open habitats such as farm fields, pastures, cattle pens, large lawns.	A	**None.** No suitable habitat in the BSA.
Yellow-billed Cuckoo	*Coccyzus americanus*	FT	Live mainly among the canopies of deciduous trees. In the West, this species is rare and restricted to the cottonwood-dominated forests	A	**None.** No suitable habitat in the BSA.

Common Name	Scientific Name	Status	General Habitat	Habitat Present?	Potential to Occur and Rationale
			that line larger rivers running through arid country.		
Western Yellow-Billed Cuckoo	*Coccyzus americanus occidentalis*	FT, SE, BCC	Riparian forest nester found along the broad, lower flood-bottoms of larger river systems. Nests in riparian thickets of willows, often mixed with cottonwoods, with understory of blackberry, nettles, or wild grape.	HP	**Moderately likely to occur.** Nearest occurrence is approximately 3 miles to north near Occidental. Riparian habitat in the BSA and project disturbance area contains willow trees that provides suitable habitat for the species. No designated critical habitat is present in the project area.
MAMMALS					
American Badger	*Taxidea taxus*	SSC	Drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Generally associated with treeless regions, prairies, park lands and cold desert areas	HP	**Moderately likely to occur.** Suitable habitat is present in non-native grassland and coyote brush. Nearest documented occurrence is approximately 1 mile to the south. Not observed during 2019 surveys.
Pallid Bat	*Antrozous pallidus*	SSC	Locally common bat species at low elevations in California. Uses a wide variety of habitats including grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. The species is most common in	HP	**Moderately likely to occur.** Suitable habitat is present in the BSA. Nearest documented occurrence is approximately 3 miles to the

Common Name	Scientific Name	Status	General Habitat	Habitat Present?	Potential to Occur and Rationale
			open, dry habitats with rocky areas for roosting.		northwest. Not observed during 2019 surveys.
Sonoma Tree Vole	*Arborimus pomo*	SSC	Occurs in old-growth and other forests, mainly Douglas-fir, redwood, and montane hardwood-conifer habitats.	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.
PLANTS					
Baker's Goldfields	*Lasthenia californica* ssp. *bakeri*	CRPR 1B.2	Closed-cone coniferous forest (openings); coastal scrub; meadows and seeps; marshes and swamps.	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.
Baker's Larkspur	*Delphinium bakeri*	FE, SE, CRPR 1B.1	Grows in decomposed shale in mixed woodland plant communities of Marin County.	A	**None.** No suitable habitat in the BSA. Only two occurrences of this species were reported to CNDDB, both in Marin County. Not observed during 2019 surveys.
Baker's Manzanita	*Arctostaphylos bakeri ssp. bakeri*	SR, CRPR 1B.1	Grows on serpentine and peridotite outcrops, in addition to roadside, chaparral, and open areas.	A	**None.** No suitable habitat in the BSA. Not observed.
Baker's Navarretia	*Navarretia leucocephala* ssp. *bakeri*	CRPR 1B.1	Mesic habitats in: • Cismontane woodland • Lower montane coniferous forest • Meadows and seeps • Valley and foothill grassland • Vernal pools	HP	**Low likelihood to occur.** Potential suitable habitat is present. Not observed during 2019 surveys, which were conducted during the blooming season.

Common Name	Scientific Name	Status	General Habitat	Habitat Present?	Potential to Occur and Rationale
Brownish Beaked-Rush	*Rhynchospora capitellata*	CRPR 2B.2	Mesic habitats including lower montane coniferous forest; meadows and seeps; marshes and swamps; and upper montane coniferous forest.	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.
Burke's Goldfields	*Lasthenia burkei*	FE, SE, CRPR 1B.1	Occurs in mesic meadows and seeps, and vernal pools.	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.
California Beaked-Rush	*Rhynchospora californica*	CRPR 1B.1	Bogs and fens; lower montane coniferous forest; meadows and seeps; freshwater marshes and swamps.	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.
Congested-headed Hayfield Tarplant	*Hemizonia congesta* ssp. *congesta*	CRPR 1B.2	Occurs in valley and foothill grassland. Sometimes occurs on roadsides.	HP	**Low likelihood to occur.** Nearest documented occurrence is approximately 4 miles south of the project site. Not observed during 2019 surveys.
Contra Costa Goldfields	*Lasthenia conjugens*	FE, SR CRPR 1B.1	Grows in vernal pools, swales, and other depressions in open grassland and woodland communities, often in alkaline soils.	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.
Dark-eyed Gilia	*Gilia millefoliata*	CRPR 1B.2	Native to the coastline of Oregon and northern California, where it grows in sand dune habitat.	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.
Dwarf Downingia	*Downingia pusilla*	CRPR 2B.2	Occurs in mesic valley and foothill grassland and vernal pools.	HP	**Low likelihood to occur.** Potential suitable habitat is present. Not observed during 2019 surveys.

Common Name	Scientific Name	Status	General Habitat	Habitat Present?	Potential to Occur and Rationale
Fragrant Fritillary	*Fritillaria liliacea*	CRPR 1B.2	Often occurs in serpentinite. Occurs in cismontane woodland; coastal prairie; coastal scrub; and valley and foothill grassland	HP	**Low likelihood to occur.** Nearest documented occurrence is approximately 4 miles northwest of the project site. Not observed during 2019 surveys.
Golden Larkspur	*Delphinium luteum*	FE, SR, CRPR 1B.1	Occurs in rocky habitats including chaparral; coastal prairie; coastal scrub.	HP	**Low likelihood to occur.** Nearest documented occurrence is approximately 4 miles northwest of the project site. Not observed during 2019 surveys.
Greene's Narrow-Leaved Daisy	*Erigeron greenei*	CRPR 1B.2	Occurs in chaparral in serpentinite or volcanic soils.	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.
Many-Flowered Navarretia	*Navarretia leucocephala* ssp. *plieantha*	FE, SE, CRPR 1B.2	Occurs in vernal pools.	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.
Marsh Microseris	*Microseris paludosa*	CRPR 1B.2	• Closed-cone coniferous forest • Cismontane woodland • Coastal scrub • Valley and foothill grassland	HP	**Low likelihood to occur.** Potential suitable habitat is present. Not observed during 2019 surveys.
Napa False Indigo	*Amorpha californica var. napensis*	CRPR 1B.2	Inhabits broadleafed upland forest (openings); chaparral; cismontane woodland.	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.

Common Name	Scientific Name	Status	General Habitat	Habitat Present?	Potential to Occur and Rationale
North Coast Semaphore Grass	*Pleuropogon hooverianus*	ST, CRPR 1B.1	This species occurs in wetlands, and occasionally non-wetlands. North Coast Semaphore Grass grows in the mixed evergreen forest, north coastal coniferous forest, freshwater wetlands, and wetland-riparian vegetation communities.	HP	**Low likelihood to occur.** Nearest occurrence was along Bohemian Highway north of Freestone in 1981. Not observed during 2019 surveys.
Oval-Leaved Viburnum	*Viburnum ellipticum*	CRPR 2B.3	Occurs in chaparral; cismontane woodland; lower montane coniferous forest	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.
Pappose Tarplant	*Centromadia parryi* ssp. *parryi*	CRPR 1B.2	Often occurs in alkaline soils in: • Chaparral • Coastal prairie • Meadows and seeps • Marshes and swamps (coastal salt) • Valley and foothill grassland (vernally mesic)	HP	**Low likelihood to occur.** Potential suitable habitat is present. Not observed during 2019 surveys.
Pennell's Bird's-Beak	*Cordylanthus tenuis* ssp. *capillaris*	FE, SR 1B.2	Closed cone coniferous forest, chaparral. In open or disturbed areas on serpentine within forest or chaparral. 45-305 m. Blooms June-Sept.	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.
Pitkin Marsh Lily	*Lilium pardalinum ssp. pitkinense*	FE, SE, CRPR 1B.1	Found only in freshwater marshes and wet meadows in western Sonoma County.	A	**None.** Only three known colonies of Pitkin Marsh lily exist and are found near State Route 116 between Sebastopol and Forestville, 5 miles from the BSA. Not observed during 2019 surveys.

Common Name	Scientific Name	Status	General Habitat	Habitat Present?	Potential to Occur and Rationale
Point Reyes Checkerbloom	*Sidalcea calycosa* ssp. *rhizomata*	CRPR 1B.2	Marshes and swamps (freshwater, near coast).	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.
Round-Headed Beaked-Rush	*Rhynchospora globularis*	CRPR 2B.1	Marshes and swamps (freshwater).	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.
Saline Clover	*Trifolium hydrophilum*	CRPR 1B.2	Marshes and swamps; valley and foothill grassland (mesic, alkaline); vernal pools.	HP	**Low likelihood to occur.** Nearest documented occurrence is approximately 3 miles northwest of the project site. Not observed during 2019 surveys.
Sebastopol Meadowfoam	*Limnanthes vinculans*	FE, SE, CRPR 1B.1	Found only in the Laguna de Santa Rosa in Sonoma County (approximately 10 miles northeast of the project site) and an area slightly to the south in the Americano Creek and Washoe Creek watersheds.	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.
Serpentine Daisy	*Erigeron serpentinus*	CRPR 1B.3	Occurs in chaparral in serpentinite and seeps.	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.
Sonoma Alopecurus	*Alopecurus aequalis var. sonomensis*	FE, CRPR 1B.1	Freshwater marshes and swamps, riparian scrub. Wet areas, marshes, and riparian banks with other wetland species. 5-365 meters. Blooms May-July.	A	**None.** The only known extant population in Sonoma County is located at Annadel State Park, 16 miles from the BSA. Not observed during 2019 surveys during the blooming season.

Common Name	Scientific Name	Status	General Habitat	Habitat Present?	Potential to Occur and Rationale
Sonoma Spineflower	*Chorizanthe valida*	FE, SE, CRPR 1B.1	Sonoma spineflower was thought to be extinct for 77 years until a population was rediscovered in Abbot's Lagoon at the Point Reyes National Seashore in 1980.	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.
Sonoma Sunshine	*Blennosperma bakeri*	FE, SE, CRPR 1B.1	Valley and foothill grassland (mesic); vernal pools.	HP	**Low likelihood to occur.** Potential suitable habitat is present. Not observed during 2019 surveys.
Swamp Harebell	*Campanula californica*	CRPR 1B.2	Occurs in mesic habitats including bogs and fens; closed-cone coniferous forest; coastal prairie; meadows and seeps; marshes and swamps (freshwater); North Coast coniferous forest.	HP	**Low likelihood to occur.** Nearest documented occurrence is approximately 5 miles northeast of the project site. Not observed during 2019 surveys.
Thin-Lobed Horkelia	*Horkelia tenuiloba*	CRPR 1B.2	Occurs in sandy mesic openings in broadleafed upland forest; chaparral; valley and foothill grassland.	HP	**Low likelihood to occur.** Nearest documented occurrence is approximately 5 miles northeast of the project site. Not observed during 2019 surveys.
Two-Fork Clover/Showy Indian Clover	*Trifolium amoenum*	FE, CRPR 1B.1	Coastal bluff scrub and valley and foothill grassland (sometimes serptentinite). Bloom period April to June	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.
Vine Hill Ceanothus	*Ceanothus foliosus* var. *vineatus*	CRPR 1B.1	Occurs in chaparral between 45 and 305 meters. Nearly extirpated in Sonoma County.	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.

Common Name	Scientific Name	Status	General Habitat	Habitat Present?	Potential to Occur and Rationale
Western Leatherwood	*Dirca occidentalis*	CRPR 1B.2	Occurs in mesic habitats including: • Broadleafed upland forest • Closed-cone coniferous forest • Chaparral • Cismontane woodland • North Coast coniferous forest • Riparian forest • Riparian woodland	HP	**Low likelihood to occur.** Nearest documented occurrence is over 5 miles west of the project site near Salmon Creek Road. Not observed during 2019 surveys.
Woolly-headed spineflower	*Chorizanthe cuspidata* var. *villosa*	CRPR 1B.2	Sandy habitats including coastal dunes, coastal prairies, and coastal scrub between 3 and 50 meters.	A	**None.** No suitable habitat in the BSA. Not observed during 2019 surveys.
Yellow/Golden Larkspur	*Delphinium luteum*	FE, SR, CRPR 1B.1	Occur on rocky areas within coastal scrub at elevations up to 100 meters.	A	**None.** No suitable habitat in the BSA and the elevation of the BSA is outside the range of the species. Now only found in two locations, both on private land.

Status Key

BCC – USFWS Birds of Conservation Concern

CRPR – California Rare Plant Rank:
1B – Rare, threatened, or endangered in California and elsewhere
2B – Rare, threatened, or endangered in California but common elsewhere
4 – Watch list species of limited distribution in California

Threat Categories

Common Name	Scientific Name	Status	General Habitat	Habitat Present?	Potential to Occur and Rationale
.1 – Seriously endangered in California .2 – Fairly endangered in California .3 – Not very endangered in California FC – Federal Candidate FE – Federal Endangered FT – Federal Threatened SCT – State Candidate Threatened SE – State Endangered ST – State Threatened SR – State Rare SSC – State Species of Special Concern **Habitat Key** A – Absent: No habitat present and no further work needed. HP – Habitat Present: Habitat is, or may be, present. The species may be present. P – Present: The species is present. CH – Critical Habitat: The project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.					

Field Survey

On June 11, 2018 and September 10, 2019, Richard Stabler, Sonoma County Senior Environmental Specialist conducted biological resources surveys of the project disturbance areas. During the surveys he conducted a water and wetlands evaluation and an on-site habitat and natural community assessment of the survey area in accordance with the protocol described in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW, 2018). All plants observed within the survey area were recorded, and plant species were identified using the Jepson eFlora and Sonoma County Flora to the taxonomic level necessary to determine rarity and listing status. Botanical nomenclature follows Jepson eFlora. Vegetation communities within the BSA were mapped to reflect the plant species documented on the site. Additional biological supporting information from the California Natural Diversity Database (CNDDB) and U.S. Fish and Wildlife Service (Service) is included in Appendix B.

Mr. Stabler documented wildlife that were observed during his surveys of the project area. Surveys did not include focused surveys for special-status wildlife or plant species. Biologists observed baseline habitat conditions and biological resources within the project area to further evaluate the potential for listed species and/ or their habitats to occur within the BSA. All wildlife species observed during project surveys and field visits were identified to the lowest taxonomic level for accurate identification and reporting.

Natural Communities and Sensitive Biological Communities

Natural communities are recurring assemblages of plants and animals found in particular physical environments. Three characteristics distinguish natural communities: 1) plant species composition, 2) vegetation structure (e.g., forest, shrubland, or marsh), and 3) a specific combination of physical conditions (e.g., water, light, nutrient levels, and climate). Natural communities within the project area have been mapped by the County **(County of Sonoma ISD GIS Central, 2001)**. Four natural communities were identified in the BSA. The natural communities are described in Table 8 and are shown in Figure 10.

Sensitive natural communities are ranked by the California Department of Fish and Wildlife (CDFW) and given special protection under CEQA. One natural community in the BSA, riparian forest, is considered a sensitive natural community[7].

Critical and Essential Fish Habitat

The project site is located within critical habitat for Central California Coast (CCC) steelhead and CCC Coho salmon (NOAA, 2005; NOAA, 1997). The project site is within designated Essential Fish Habitat for CCC Coho salmon (NOAA, 2014a) and CC Chinook salmon (NOAA, 2014b).

Wetlands

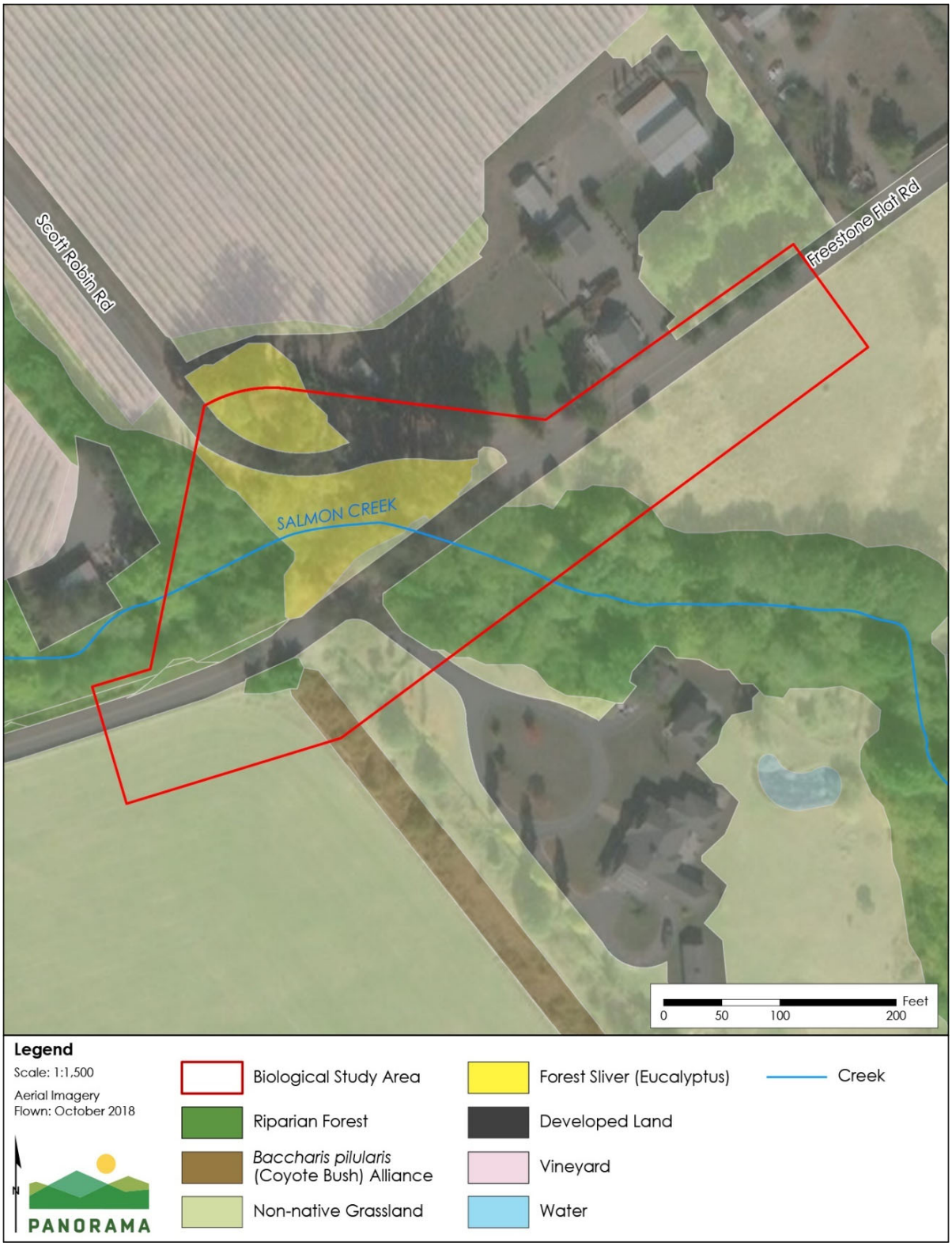
Deborah Waller, Sonoma County Senior Environmental Specialist conducted an evaluation for potential presence of federal and state waters and wetlands on May 16, 2018 on a portion of the northeast bank of Salmon Creek. No wetlands occur in the BSA.

[7] The riparian forest in the project area is dominated by California bay (*Umbellularia californica*) and white alder (*Alnus rhombifolia*), and corresponds to the *Manual of California Vegetation* alliance California Bay Forest . This alliance is ranked S3 and considered a sensitive natural community.

Table 8 Natural Vegetation Communities within the Survey Area

Vegetation Community	Description
Coyote Brush Scrub	Coyote brush scrub is a shrubland that is dominated by coyote brush (*Baccharis pilularis*). Coyote brush scrub is characterized by coyote brush and a somewhat indistinct assemblage of shrub, sub-shrub, and herbaceous understory associates. The alliance is very common and widespread in northern, coastal, and central California occurring at river mouths, stream sides, terraces, stabilized dunes of coastal bars, spits along the coastline, coastal bluffs, open slopes, and ridges. Soil requirements are variable, ranging from sandy to relatively heavy clay .
Non-Native Grassland	Dominant plants in the non-native grassland include wild oats (*Avena barbata*), field mustard (*Brassica rapa*) and wild geranium (*Geranium dissectum*).
Forest Sliver	The forest sliver in the BSA consists primarily of a eucalyptus grove dominated by blue gum eucalyptus (*Eucalyptus globulus*).
Riparian Forest	The riparian forest includes trees along the creek banks and terraces, which are dominated by California bay (*Umbellularia californica*), white alder (*Alnus rhombifolia*), and willows (*Salix spp*.). The community also includes bigleaf maple (*Acer macrophyllum*), box elder (Acer negundo), Oregon ash (*Fraxinus latifolia*) and plums (*Prunus spp.*). Shrubs, vines, and herbaceous plant layers are dominated by Himalayan blackberry (*Rubus armeniacus*), poison oak (*Toxicodendron diversilolobium*), spicebush (*Calcanthus occidentalis*), creek dogwood (*Cornus sericea*), Pacific ninebark (*Physocarpus capitatus*), stinging nettle (*Urtica diocia ssp. Gracilis*) and mugwort (*Artemesia douglasiana*).

Figure 10 Vegetation Communities



Sources: (County of Sonoma ISD GIS Central, 2001; CDF, USGS, Sonoma Ecology Center: Compiled by County of Sonoma ISD GIS Central, 2003; DigitalGlobe, 2018; Sonoma County Water Agency, Sonoma County Agricultural Preservation and Open Space District, Sonoma County Vegetation Mapping and LiDAR Program, 2017)

Environmental Impacts

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 the U.S. Fish and Wildlife Service?

Less than Significant with Mitigation.

Crustaceans and Fishes

CCC Coho salmon, CCC steelhead, and California freshwater shrimp may occur in Salmon Creek, which traverses the project site. The project would not involve any construction within the wetted portion of Salmon Creek. All work along the creek banks would occur during periods of no or low flow and work would be conducted above the ordinary high-water mark and outside of suitable habitat for CCC Coho salmon, CCC steelhead and California freshwater shrimp.

The project includes removal of approximately 40 trees within the project footprint ~~along the streambank~~. No ground disturbance or tree removal is proposed within wetted areas of the creek. Tree removal along the upper banks of Salmon Creek could temporarily result in decreased shaded stream habitat, which would cause a reduction in habitat quality for California freshwater shrimp in the immediate area. The majority of removed trees that currently shade Salmon Creek occur within or adjacent to the footprint of the new bridge (refer to Appendix E); therefore, construction of the new bridge is expected to provide equivalent shade to replace the shade lost during tree removal. The current bridge does not provide a substantial amount of shade due to the steel grate deck, which allows sunlight to pass through the deck to the creek below. The project would have a less than significant impact on habitat for special-status fish and shrimp.

Construction equipment~~, particularly pile drivers,~~ generate vibration and noise. Construction equipment noise and vibration could affect special-status fish if special-status fish were to occur in Salmon Creek at the time of construction. Construction noise and vibration would be temporary and would be isolated to the work area (less than 75 linear feet of Salmon Creek). Furthermore, construction is scheduled to occur during low or no flows when salmonids would not be expected to occur in the area. Construction noise and vibration would, therefore, have a less than significant impact on special-status fish.

The project involves disturbance of 1.303 acres during construction. The ground disturbance could increase sedimentation to Salmon Creek as a result of unstabilized soil conditions or improper storage of fill materials (refer to Hydrology and Water Quality Impact A) for a water quality analysis). Construction equipment could leak or improper handling of hazardous materials could result in spills into Salmon Creek if not properly contained. The County would be required to implement a Stormwater Pollution Prevention Plan (SWPPP), which includes implementation of sediment control (e.g., silt fencing), spill prevention and cleanup BMPs to protect water quality in Salmon Creek. The impact on special-status fish and California freshwater shrimp from sedimentation and other water quality impacts to Salmon Creek would be less than significant. No mitigation is required.

Amphibians and Reptiles

California Red-Legged Frog. The wetted channel of Salmon Creek within the project site contains suitable habitat for California red-legged frog. California red-legged frog use upland habitat for estivation and will hibernate through the dry summer months in moist small mammal burrows, under logs, or under leaf litter. The project would not impact the wetted channel of Salmon Creek, which is potential dispersal habitat for California red-legged frog or breeding habitat in small pools. California red-legged frog could hibernate in upland burrows where grading, vegetation removal, excavation, or equipment access may occur. If California red-legged frog were to occur within the construction area, there is potential for project activities

to harm or kill individuals. Construction activities could crush or collapse a burrow containing individual California red-legged frog. The impact on California red-legged frog from construction activities is potentially significant. Mitigation Measure BIO-1 requires implementation of a worker training to aid construction workers in identification and avoidance of California red-legged frog. Mitigation Measure BIO-2 identifies the requirements for the qualified biologist who will implement Mitigation Measures BIO-3 and 4, which require impact avoidance and reduction measures approved by the United States Fish and Wildlife Service (Service) in the project Biological Opinion (08ESMF00-2020-F-1273) to reduce potential project impacts, including pre-construction surveys, biological monitoring, and exclusion fencing to avoid California red-legged frog. Impacts to California red-legged frog would be less than significant with mitigation.

Construction activities would disturb 1.303 acre and could cause erosion and sedimentation of Salmon Creek, decreasing water quality (refer to Hydrology and Water Quality Impact A) for a water quality analysis). The County is required to implement sediment and erosion control and water quality protection BMPs in accordance with the SWPPP, which would reduce water quality impacts to Salmon Creek. The impact on California red-legged frog from sedimentation, erosion, or other water quality impacts would be less than significant.

Western Pond Turtle. Salmon Creek within the project site provides suitable breeding and dispersal habitat to the western pond turtle. Western pond turtle are known to occur within 300 feet for streams and habitat areas. Construction activities have the potential to impact individual turtles if one were to enter the active construction area. Impacts on western pond turtle are potentially significant. Mitigation Measure~~s~~ BIO-1 requires worker training to aid construction workers in identification and avoidance of western pond turtle. Mitigation Measures BIO-4 and 5 require exclusion fencing, pre-construction surveys, and biological monitoring for western pond turtles to avoid a western pond turtle from entering the project site at the time of construction. Impacts to western pond turtle would be less than significant with mitigation.

Increased sedimentation and turbidity of Salmon Creek caused by construction could affect habitat quality for western pond turtle. The County is required to implement sediment and erosion control and water quality protection BMPs in accordance with the SWPPP, which would reduce water quality impacts to Salmon Creek. The impact on western pond turtle from sedimentation, erosion, or other water quality impacts would be less than significant.

Birds

Western Yellow-Billed Cuckoo. The project would involve tree removal and heavy equipment use within riparian forest where there is a moderate potential for encountering western yellow-billed cuckoo. If western yellow-billed cuckoo individuals or a nest were to occur within the project area during construction, tree removal and use of heavy equipment within riparian forest could inadvertently harass, harm, or kill the birds or disturb or destroy the nest. Nest mortality or abandonment as a result of nearby project activities could adversely affect western yellow-billed cuckoo. Removal of willow trees would impact suitable riparian habitat for western yellow-billed cuckoo, which would reduce opportunities for future nesting and foraging in the area. Impacts on suitable riparian habitat for western yellow-billed cuckoo could indirectly affect the species by removing areas for nesting. The project impacts on western yellow-billed cuckoo are potentially significant. Mitigation Measure~~s~~ BIO-1 requires worker training to aid construction workers in identification and avoidance of nests. Mitigation Measure BIO-2 identifies the requirements for the qualified biologist who will implement Mitigation Measure BIO-8, which requires pre-construction surveys for western yellow-billed cuckoo and the cessation of all nearby project activities whenever an individual is observed on site. Mitigation Measure BIO-6 requires all tree removal to occur outside the nesting season. Mitigation Measure BIO-9 requires the development of a Riparian Mitigation and Monitoring Plan that includes revegetation, enhancement, and monitoring of riparian habitat to address temporary and permanent impacts through restoration of temporary impacts and compensation of permanent ~~avoid~~ habitat loss. The

Riparian Mitigation and Monitoring Plan would be developed based on the project's final engineering design and submitted to CDFW for review and approval prior to project construction. The direct and indirect impacts from construction activities on the western yellow-billed cuckoo would be less than significant with mitigation.

Mammals

American Badger. Badgers could occur in a den in the project area or pass through the project site during construction. Due to the species' size and mobility, individuals can move away from construction activities, such as human presence and the presence of mechanical equipment. Badger dens are typically located from 2 to 7 feet below the ground surface in relatively dry, often sandy, soil. Heavy equipment could potentially crush a badger den, resulting in death or injury of a badger or young. Impacts on American badger are potentially significant. Mitigation Measures BIO-1 requires worker training to aid construction workers in identification and avoidance of badgers. Mitigation Measure BIO-10 requires pre-construction surveys for badger dens, passive relocation of non-breeding badgers, and avoidance of dens occupied by badger cubs. The impact on American badgers from construction activities would be less than significant with mitigation.

Pallid Bat. Pallid bats are colonial bats that roost in crevices and deep fissures in the wood or bark of a tree. Construction activities, including tree removal and demolition of the existing bridge could directly harm or kill roosting bats and result in the loss of roosting sites. A total 40 trees would be removed and of those, six oak trees and two conifers have a diameter[8] of 10 inches or larger and have potential to provide bat roosting habitat (refer to Appendix E). Removal of oaks and conifers with a diameter of 10 inches or greater would result in an insignificant loss of roost opportunities on the project site, given the densely wooded area surrounding the project site. Loud, mechanical equipment used during construction could force bats roosting in proximity to the project area to leave a roost. The impacts on pallid bat are potentially significant. Mitigation Measures BIO-1 requires worker training to aid construction workers in identification and avoidance of bats. Mitigation Measure BIO-11 requires pre-construction surveys of potential roosting areas and implementation of a Roosting Bat Protection Plan. The impacts on pallid bats from construction activities would be less than significant with mitigation.

Special-Status Plants

The project site provides potential suitable habitat for special-status plant species as shown in Table 7. While no special-status plant species were identified during biological surveys conducted in 2019, several species still have a low potential to occur in proposed work areas at the time of construction. Construction activities could directly impact special-status plants by removing or crushing the plants if they occurred in work areas at the time of construction. Removal of special-status plants through grading would be a significant impact. Mitigation Measure BIO-1 requires worker training to aid construction workers in identification and avoidance of special-status plant species. Mitigation Measure BIO-12 requires pre-construction surveys prior to construction and fencing off any areas of special-status plants for avoidance or transplanting of any special-status plants that cannot be avoided. The impact on special-status plants would be less than significant with mitigation.

Mitigation Measure BIO-1: Worker Environmental Awareness Program (WEAP)

A Service-approved biologist will conduct employee education training for employees working on earthmoving and/or construction activities. Personnel will be required to attend the presentation, which will describe the Federal and State statutes protecting threatened, endangered, and special-status species

[8] Diameter at breast height (dbh)

that may be encountered on site; minimization and conservation measures; legal protection of species; and other related issues. Specifically, the WEAP shall include a description of all species identified as having moderate potential to occur in Table 7 of this IS/MND, the areas on site where they may occur, and any mitigation required to reduce impacts on those species. All attendees will sign an attendance sheet along with their printed name, company or agency, email address, and telephone number. The original sign-in sheet will be sent to the Service within seven (7) calendar days of the completion of the training.

Mitigation Measure BIO-2: Qualified Biologist

A biologist(s) approved by the United States Fish and Wildlife Service (Service) and CDFW will be on-site during ground disturbance activities (e.g., grading and vegetation removal) that may result in take of state or federally threatened and endangered species. The qualified biologist must have experience with identifying all federal and state-listed species, as well as special-status species, with potential to occur as determined in Table 7 of this IS/MND. The biologist shall have specific experience identifying western yellow-billed cuckoo and California red-legged frog during all distinct life stages and experience with implementing conservation and other avoidance and minimization measures for these species and interacting with contractors and construction workers to ensure these measures are enforced. The qualifications of the biologist(s) will be submitted to the Service for review and written approval at least thirty (30) calendar days prior to the date earthmoving is initiated at the project site.

Mitigation Measure BIO-3: California Red-Legged Frog Avoidance, Pre-Construction Survey and Biological Monitoring

The County and their contractor shall implement the following measures, which have been approved by the Service, to reduce or avoid impacts to California red-legged frog:

- **Pre-Construction Survey.** No more than twenty-four (24) hours prior to the date of initial ground disturbance, a pre-construction survey for the California red-legged frog will be conducted by a Service-approved biologist at the project site. The survey will consist of walking the project limits and within the project site to ascertain the possible presence of the species. The Service-approved biologist will investigate all potential areas that could be used by the California red-legged frog for feeding, breeding, sheltering, movement, and other essential behaviors. This includes an adequate examination of mammal burrows, such as California ground squirrels or gophers. If any adults, sub-adults, juveniles, tadpoles, or eggs are found, the Service-approved biologist will contact the Service to determine if moving any of the individuals is appropriate. In making this determination the Service will consider if an appropriate relocation site exists. If the Service approves moving animals, the County will ensure the Service-approved biologist is given sufficient time to move the animals from the work site before ground disturbance is initiated. Relocation would be completed in accordance with the procedures defined in this mitigation measure, below. Only Service-approved biologists will capture, handle, and monitor the California red-legged frog.

- **Construction Timing.** To the extent practicable, initial ground-disturbing activities will be avoided between November 1 and March 31 because that is the time period when California red-legged frogs are most likely to be moving through upland areas. When ground-disturbing activities must take place between November 1 and March 31, Sonoma County will ensure that daily monitoring by the Service-approved biologist is completed for the California red-legged frog.

To the maximum extent practicable, no construction activities will occur during rain events or within 24-hours following a rain event (with greater than 0.1 inch of rainfall). Prior to construction activities resuming after a rain event non-work period, a Service- approved biologist will inspect the action area and all equipment/materials for the presence of California red-legged frogs. Any California red-legged frog encountered will be allowed to move away from the project site of their own volition or moved only by the Service-approved biologist in accordance with the procedures for California red-legged frog relocation defined below.

- **California Red-Legged Frog Relocation.** Each encounter with the California red-legged frog will be treated on a case-by-case basis in coordination with the Service, but the general procedure is as follows: (1) the animal will not be disturbed if it is not in danger; or (2) the animal will be moved to a secure location if it is in any danger. These procedures are further described below:

  a. When a California red-legged frog is encountered in the action area, all activities which have the potential to result in the harassment, injury, or death of the individual will be immediately halted. The Service-approved biologist will then assess the situation in order to select a course of action that will avoid or minimize adverse effects to the animal. To the maximum extent possible, contact with the frog will be avoided and the applicant will allow it to move out of the potentially hazardous situation to a secure location on its own volition. This procedure applies to situations where a California red-legged frog is encountered while it is moving to another location. It does not apply to animals that are uncovered or otherwise exposed or in areas where there is not sufficient adjacent habitat to support the species should the individual move away from the hazardous location.

  b. California red-legged frogs that are in danger will be relocated and released by the Service- approved biologist outside the construction area within the same riparian area or watershed. If relocation of the frog outside the fence is not feasible (i.e., there are too many individuals observed per day), the biologist will relocate the animals to a Service pre- approved location. Prior to the initial ground disturbance, Sonoma County will obtain approval of the relocation protocol from the Service in the event that a California red- legged frog is encountered and needs to be moved away from the project site. Under no circumstances will a California red-legged frog be released on a site unless the written permission of the landowner has been obtained by Sonoma County.

     The Service-approved biologist will limit the duration of the handling and captivity of the California red-legged frog to the minimum amount of time necessary to complete the task. If the animal must be held in capacity, it will be kept in a cool, dark, moist, aerated environment, such as a clean and disinfected bucket or plastic container with a damp sponge. The container used for holding or transporting the individual will not contain any standing water.

  c. Sonoma County will immediately notify the Service once the California red-legged frog and the site is secure. The contact for this situation is the Coast Bay Division Chief of the Endangered Species Program by email and at telephone (916) 414-6623.

- **Avoid Entrapment**

  - Plastic monofilament netting (erosion control matting), loosely woven netting, or similar material in any form will not be used at the project site because California red-legged frogs can become entangled and trapped in them. Any such material found on site will be immediately removed by the Service-approved biologist, construction personnel, or the

applicant. Materials utilizing fixed weaves (strands cannot move), polypropylene, polymer or other synthetic materials will not be used.

- Loss of soil from run-off or erosion will be prevented with straw bales, straw wattles, or similar means provided they do not entangle, block escape or dispersal routes of California red-legged frog.
- Trenches or pits one (1) foot or deeper that are going to be left unfilled for more than forty- eight (48) hours will be securely covered with boards or other material to prevent the California red-legged frog from falling into them. If this is not possible, Sonoma County and their contractor will ensure wooden ramps or other structures of suitable surface that provide adequate footing for the California red-legged frog are placed in the trench or pit to allow for their unaided escape. Auger holes or fence post holes that are greater than 0.10 inch in diameter will be immediately filled or securely covered so they do not become pitfall traps for the California red-legged frog. The Service-approved biologist will inspect the trenches, pits, or holes prior to their being filled to ensure there are no California red-legged frogs in them. The trench, pit, or hole also will be examined by the Service-approved biologist each workday morning at least one hour prior to initiation of work and in the late afternoon no more than one hour after work has ceased to ascertain whether any individuals have become trapped. If the escape ramps fail to allow the animal to escape, the Service-approved biologist will remove and transport it to a safe location, or contact the Service for guidance.

Mitigation Measure BIO-4: Exclusion Fencing

Temporary exclusion fencing shall be installed around the limits of work areas and access routes to avoid disturbance in unauthorized areas and ensure California red-legged frog or western pond turtle cannot enter the work area after construction commences. Installation of exclusion fencing shall occur under the supervision of the qualified biologist and immediately following a clearance survey of the area. The exclusion fencing shall have a minimum aboveground height of 30 inches, and the bottom of the fence shall be keyed in at least 4 inches deep and backfilled with soil to prevent wildlife from passing under the fencing. Exclusion fencing shall be installed to prevent species entry into active work areas and to mark the limits of construction disturbance at equipment staging areas, site access routes, construction equipment and personnel parking areas, debris storage areas, and any other areas that may be disturbed. The exclusion fencing shall specifically exclude any areas within the limits of the Salmon Creek ordinary high-water mark and wetted areas of the creek, whichever is higher in elevation.

Mitigation Measure BIO-5: Pre-Construction Survey and Biological Monitoring for Western Pond Turtle

The County and their contractor shall implement the following measures to reduce or avoid impacts to western pond turtle:

- A preconstruction survey for western pond turtle shall occur within 48 hours prior to the start of construction activities within the riparian and aquatic habitat in the BSA.
- A qualified biologist will be present during grubbing and clearing activities in the riparian and aquatic habitat in the BSA to monitor for western pond turtle.
- If a western pond turtle is observed in areas of active construction, construction will cease and a qualified biologist will be notified. Construction may resume when the biologist has either relocated the western pond turtle to nearby suitable habitat outside the limits of project

construction, or, after thorough inspection, determined that the western pond turtle has moved away from the area of active construction.

Mitigation Measure BIO-6: Nesting Bird Season Avoidance, Pre-Construction Surveys, and Monitoring

The County and their contractor shall implement the following measures to reduce or avoid impacts to nesting birds during construction:

- **Avoid Tree Removal during Nesting Season.** Tree removal and trimming activities shall avoid the bird nesting season (~~typically~~ February 15 through August 31). Trees that have been identified for removal shall be removed prior to the bird nesting season to avoid impacts to nesting birds. Trees shall be cut at ground level and removed from the site. The stump shall remain in place until after the end of the rainy season (April 15). Tree stumps within the roadway prism or in conflict with new bridge foundations may be completely removed during road and bridge construction.
- **Activities During Nesting Season.** If construction commences during the nesting season, the following shall be implemented:
  - A preconstruction survey for nesting birds shall be conducted within 7 days prior to construction within 500 feet of work areas to ensure that no nest shall be disturbed during construction.
  - If active nests of migratory bird species (listed in the MBTA) are found within the project site, or in areas subject to disturbance from construction activities, an avoidance buffer to avoid nest disturbance shall be constructed. The buffer size shall be determined by a qualified biologist and shall be based on the nest location, topography, cover and species' tolerance to disturbance.
  - If an avoidance buffer is not achievable, a qualified biologist shall monitor the nest(s) to document that no take of the nest (nest failure) has occurred. Active nests shall not be taken or destroyed under the MBTA and, for raptors, under the CDFW Code. If it is determined that construction activity is resulting in nest disturbance, work shall cease immediately and the County shall consult with the qualified biologist and appropriate regulatory agencies.
  - If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further action is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by special-status birds or that are located outside the avoidance buffer for active nests may be removed. Nests initiated during construction (while significant disturbance from construction activities persist) may be presumed to be unaffected, and only a minimal buffer, determined by a qualified biologist, would be necessary.

Mitigation Measure BIO-7: Discourage Bird Nesting on Bridge

To discourage bird nesting on the existing bridge during construction, existing inactive bird nests on the Freestone Flat Road Bridge shall be removed prior to the onset of construction, between September 1 and February 14 (outside of the nesting season). Following removal of inactive nests, nest deterrent measures shall be installed on the existing bridge to prevent establishment of new nests. Techniques to prevent nest establishment include using exclusion devices (see below), removing and disposing of partially constructed and unoccupied nests of migratory or nongame birds on a regular basis to prevent their occupation, or performing any combination of these techniques.

- *Exclusion Device:* Install bird netting from the bridge prior to start of nesting season (i.e. before February 15). If this technique is used, netting shall be in place from mid-February until the

bridge is removed. If a nesting deterrent is used, the deterrent shall be monitored for integrity and effectiveness until the bridge is removed.

- *Nest Removal.* Starting before the nesting season (i.e., prior to February 15), the County or its contractor shall visit the site ~~weekly~~ daily and remove partially completed nests on the bridge using either hand tools or high pressure water. Disturbance or removal of active nests (i.e., nests containing eggs or young) shall not be conducted without the appropriate authorization(s) from the Service and/or the CDFW.

If nests cannot be removed prior to the nesting season (i.e., before February 15), a qualified biologist shall determine if nests are inactive and can be removed before construction begins without disturbing nesting activity. If active nests are identified, construction in the vicinity of the bridge may need to be postponed until nests are determined by a qualified biologist to be inactive or the Service and/or CDFW authorizes the removal of active nests. An effective deterrent to bird nesting shall be installed on the bridge once the nests are removed.

Mitigation Measure BIO-8: Pre-Construction Surveys and Construction Monitoring for Western Yellow-Billed Cuckoo

Preconstruction surveys for western yellow-billed cuckoo and construction monitoring shall be conducted by a qualified biologist (see Measure BIO-2) in all project areas within suitable habitat and a 500-foot buffer from suitable habitat. In the event that western yellow-billed cuckoo(s) are detected within the work area (the area of active equipment uses), all construction activities in the area shall halt and Caltrans and the Service and CDFW shall be notified by no later than noon of the next business day. Project activities in the area may not proceed until the cuckoo(s) have left the work area. Where cuckoo(s) are detected within 500 feet of the construction area, project activities in the area may proceed with caution under the direction of the qualified biologist who is monitoring the activity of the western yellow-billed cuckoo in the area and has the ability to halt work. If impacts to western yellow-billed cuckoo cannot be avoided, the County and/or Caltrans shall initiate consultation with CDFW and the Service, which may include obtaining a California Endangered Species Act Incidental Take Permit and federal authorization.

Mitigation Measure BIO-9: Riparian Mitigation and Monitoring Plan

The County shall enhance ~~or~~ and restore ~~0.021 acre of~~ riparian habitat to mitigate for permanent and temporary impacts. The County shall prepare a Riparian Mitigation and Monitoring Plan that addresses mitigation and monitoring for riparian habitat that shall be impacted by the project. The Riparian Mitigation and Monitoring Plan will be provided to CDFW for review and approval prior to the beginning of construction and will also address mitigation requirements contained in the CDFW Streambed Alteration Agreement. The plan shall, at a minimum:

- Identify the location of the mitigation site(s). The County's preference is for mitigation to occur on site or in the immediate project vicinity (along Salmon Creek). The County shall consider off-site mitigation only if mitigation along Salmon Creek is infeasible;
- Require the following mitigation ratios for temporary and permanent impacts. Impact acreage will be based on the project's final engineering design:
    - Temporary impacts to 0.185 acre of riparian habitat restored on-site at a 1:1 ratio (restoration area: impacted area)
    - Permanent impacts to 0.021 acre of riparian habitat mitigated for on-site at a 2:1 ratio (mitigation area: impacted area) or off-site at a ratio to be determined in coordination with CDFW as part of the Streambed Alteration Agreement

- Include the following tree replacement ratios (number replaced: number removed):
  - Non-native trees greater than 4 inches diameter at breast height (DBH) replaced on-site with native riparian species at a 1:1 ratio
  - Native riparian trees greater than 4 inches DBH replaced on-site at a ratio of 3:1
  - Native oak trees replaced on-site at a:
    - 4:1 ratio for oaks that measure 5 to 10 inches DBH
    - 6:1 ratio for oaks that measure 10 to 15 inches DBH
    - 10:1 ratio for oaks the measure greater than 15 inches DBH
- A schematic depicting the mitigation area including initial site photographs;
- The species to be seeded and planted and the ratio of seed mix and/or plantings for each species;
- A work schedule, including names, titles and companies for all individuals who are involved in preparing the plan and conducting activities;
- Specific success criteria;
- A maintenance and monitoring program for 5 years, unless success criteria are met prior to 5 years, in which case maintenance and monitoring would cease; and
- Contingency measures should the success criteria not be met.

Mitigation Measure BIO-10: Protection of Badgers

Prior to construction in badger denning habitat, which is characterized by herbaceous, shrub, and open stages of most habitats with dry, friable soils, a qualified wildlife biologist shall conduct a survey to identify any American badger burrows/dens. No less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities, a qualified biologist shall conduct a survey to determine if American badger den sites are present at the site. If dens are found, they will be monitored for badger activity. If the qualified biologist determines that dens may be active, the entrances of the dens will be blocked with soil, sticks, and debris for 3 to 5 days to discourage the use of these dens prior to project disturbance activities. The den entrances will be blocked to an incrementally greater degree over the 3- to 5-day period. After the qualified biologist determines that badgers have stopped using active dens, the dens will be hand-excavated with a shovel to prevent re-use during construction. No disturbance of active dens will take place when cubs may be present and dependent on parental care, as determined by a qualified biologist.

Mitigation Measure BIO-11: Roosting Bat Protection Plan

A qualified biologist shall conduct a pre-construction survey 14 days prior to tree removal and construction and demolition of the existing bridge. If any active bat roosts are observed within 50 feet of the construction area or on the existing bridge a Roosting Bat Protection Plan shall be prepared and implemented. If no active bat roosts are observed, no further measures would be required. The Roosting Bat Protection Plan will be prepared in accordance with guidance from the California Bat Mitigation Techniques Solutions, and Effectiveness (Johnston, Tatarian, & Pierson, 2004).

Mitigation Measure BIO-12: Special-Status Plants Pre-Construction Survey

A qualified botanist shall conduct a pre-construction survey for rare plants within all areas of project disturbance prior to project start. The qualified botanist shall either mark the species for avoidance and Environmental Sensitive Area (ESA) fencing shall be installed to protect the plant or if the plant cannot be avoided, the plant shall be transplanted under the direction of a qualified botanist. Transplanting would only occur if avoidance is not feasible and any transplanted special-status plants would be

replanted within a suitable habitat area within the project area under the direction of a qualified botanist.

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

Less than Significant with Mitigation. Riparian forest is a sensitive natural community found within the project area. Construction would involve vegetation removal and grading in the riparian forest. Willow trees within riparian habitat that cannot be avoided would be cut, leaving the stumps to regenerate following construction. Only trees that would conflict with the new bridge or realigned roadway would be completely removed. Implementation of the project would result in permanent loss of approximately 0.021 acre of riparian forest and temporary loss approximately 0.185 acre of riparian forest habitat. The permanent loss of riparian habitat would be a significant impact. Impacts to riparian forest habitats would be partially minimized during construction through the implementation of Mitigation Measure BIO-4, which involves the installation of exclusion fencing to avoid impacts to riparian vegetation where possible. Exclusion fencing would delineate the project work areas and keep equipment and personnel from impacting areas outside the exclusion fencing.

Mitigation Measure BIO-9 requires the County to prepare and implement a Riparian Mitigation and Monitoring Plan, which requires compensatory mitigation of riparian habitat for impacts that cannot be avoided. CDFW has the authority to regulate activities that modify the physical characteristics of a stream and activities that may affect fish and wildlife resources that use the stream and surrounding habitat (i.e., the riparian vegetation). The Riparian Mitigation and Monitoring Plan would identify specific locations for restoration of temporary impacts (approximately 0.185 acre) to riparian habitat at a 1:1 ratio, and enhancement of permanent impacts (approximately 0.021 acre) at a 2:1 ratio, or at a ratio to be determined in coordination with CDFW as part of the Streambed Alteration Agreement. The County will submit a Streambed Alteration Agreement notification package to CDFW prior to construction. The notification package would identify temporary and permanent impact areas based on the project's final engineering design, which may result in minor adjustments to the amount and location of temporary and permanent impacts. Mitigation Measure BIO-9 requires the plan to be submitted and approved prior to the beginning of construction to ensure that all temporary and permanent impacts to riparian forest are properly mitigated in accordance with CDFW requirements. Impacts to the riparian forest sensitive vegetation community would be less than significant with implementation of mitigation.

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?

No Impact. No wetlands were identified within the project area (Sonoma County , 2019). The project would not impact any state or federally protected wetlands.

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?

Less than Significant Impact with Mitigation. Salmon Creek is a migratory corridor for CCC Coho salmon and CCC steelhead, and could potentially serve as a nursery or spawning site for CCC Coho salmon. California red-legged frog could deposit egg masses in Salmon Creek. The project does not include any structures within Salmon Creek and would not create a barrier to fish migration.

Birds could nest and bats could roost in trees within the project area and under the existing bridge. No other native wildlife nursery sites are found on the project site or in the vicinity. Use of noise-generating equipment could disturb roosting birds and bats, impeding use of nursery sites. The impact bat nursery sites

is discussed further under impact A) above and is potentially significant.

The project would involve tree removal and heavy equipment use within riparian forest where there is a high potential for encountering nesting birds protected under California Fish and Game Code. Tree removal could result in nest destruction or mortality of young if the trees were removed during the nesting season, which is typically February through September, and an active nest is present. Tree removal is planned to occur prior to the nesting season; however, impacts on nests could occur if construction were delayed and trees were removed during the nesting season. Bird nests may occur on the existing bridge and could be damaged during removal of the bridge. Use of heavy equipment and the increase in human activity associated with the project could also cause nest abandonment if construction were to occur near an active nest during the nesting season. Loss of an active nest, whether directly through tree or bridge removal, or indirectly due to adjacent noise and activity, would violate Fish and Game Code and the migratory bird treaty act and result in a significant impact. Mitigation Measure BIO-6 requires tree removal to occur outside the nesting season and implementation of specific nest-avoidance procedures during the bird nesting season, including conducting pre-construction nesting bird surveys and establishing buffers around any active nests. Mitigation Measure BIO-7 requires implementation of nest deterrents on the existing bridge to avoid nest establishment prior to bridge removal. The impact on nesting birds would be less than significant with mitigation.

Mitigation Measure BIO-6 requires all tree removal to occur outside the nesting season and for specific procedures to be implemented during the bird nesting season, including conducting pre-construction nesting bird surveys and buffers around any active nests. Mitigation Measure BIO-12 requires pre-construction surveys of potential roosting areas and implementation of a Roosting Bat Protection Plan. The impact on bird and bat nursery sites would be less than significant with mitigation.

The project would not increase traffic along the road or substantially widen the road prohibiting wildlife crossing. The project would not create a new barrier to wildlife movement and the impact on wildlife migration would be less than significant.

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

Less than Significant with Mitigation. The Sonoma County Tree Protection Ordinance (Sonoma County Code of Ordinances, Chapter 26, Article 88, Sec. 26-88-010 [m]) establishes policies for protected tree species in Sonoma County. Several species are defined as protected trees (Chapter 26, Article 02, Sec. 26-02-140). The Sonoma County Tree Protection Ordinance determines the amount and species of tree replacement required for a project using a ratio of removed arboreal value / existing arboreal value. If the project's arboreal value ratio exceeds 50 percent, then tree replacement would be required. All trees to be replaced would be the same native species as that removed. Big leaf maple, coast live oak, and California bay are among the tree species designated as protected by the County that were observed within the project area during surveys (Sonoma County , 2019). The County has prepared a Tree Removal Exhibit (Appendix E) for the project. Removal of any protected tree would constitute a significant impact. Mitigation Measure BIO-13 requires replacement of trees and monitoring to ensure success. The impact from construction of the project on protected trees would be less than significant with mitigation.

Mitigation Measure BIO-13: Tree Replacement and Monitoring Plan

Prior to the start of construction, the County shall determine whether the trees identified for removal would fall under protection of the Tree Protection Ordinance. If any protected tree would be removed, the County shall adhere to the requirements of the Sonoma County Tree Protection Ordinance (Section 26-88-010(m)), including by implementing replacement plantings in accordance with the standards set forth therein. Protocols for the installation, monitoring, and successful establishment of replacement

plantings shall be specified in a Tree Replacement and Monitoring Plan. The Tree Replacement and Monitoring Plan shall include protocols for replanting of trees removed prior to or during construction, and management and monitoring of the trees to ensure replanting success. Where it is infeasible to replant the total number of trees required on the project site due to size constraints or repeated failure to thrive, the County may replant a selected number of trees off-site or make in-lieu payment fees in accordance with the terms of the Ordinance.

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

No Impact. The project site is not located within the boundaries of a Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. The project would not conflict with any adopted or approved conservation plan. No impact would occur.

Cultural Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	☐	☒	☐	☐
B) Cause a substantial adverse change in the significance of an archaeological resource as defined in § 15064.5?	☐	☒	☐	☐
C) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

A) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5? and B) Cause a substantial adverse change in the significance of an archaeological resource as defined in § 15064.5?

Less Than Significant with Mitigation. Archival research was conducted to identify previously recorded historical or archaeological resources within 0.5 mile of the area of potential effect (APE) for the project. The APE included the area of direct impact (project footprint), existing and proposed right-of-way, temporary work areas, and staging areas. Archival research included:

- a records search at the Northwest Information Center, Sonoma State University (NWIC File Nos. 15-0599 and 17-2513),
- an examination of available County records, maps, and aerial photographs,
- consultation with the Native American Heritage Commission, and
- field inspection of the project location.

Research found that the existing bridge was determined to be not eligible for the California Register of Historical Resources (CRHR) during the 1987 Caltrans bridge survey, and its status was reconfirmed in the

2004 update of that study (Caltrans, 2019b). There were no other recorded resources within the APE. A section of the North Pacific Coast Railroad grade is recorded adjacent to the APE, north of Freestone Flat Road (Caltrans, 2019b). The railroad section is outside the APE and would not be affected by the project.

Two properties within the project vicinity are older than 50 years and, thus, potentially eligible for listing on the CRHR. Additional research was completed for the two properties to evaluate their historical importance. Neither building would be directly impacted by the project and both buildings were found not eligible for the CRHR.

The archival research and field inspection resulted in no previously recorded archaeological resources within the APE. Five resources were identified within 0.5 mile of the APE, including three prehistoric sites, one historical site, and part of a historic district. No known historical or archaeological resources occur in the APE. Construction of the project would require ground-disturbing work during grading of new road segments, excavation for bridge abutments, and demolition of existing roadways. Due to environmental characteristics of the APE, such as soil types, slope, and proximity to water, the potential for encountering archaeological and historic resources in the project area is considered to be high (Caltrans, 2019a) and the possibility of encountering previously undiscovered historic resources cannot be completely eliminated. Previously undiscovered historic or archaeological resources that are eligible for listing on CRHR could be uncovered during ground disturbing work. Impacts to any previously undiscovered historic or archaeological resources that are eligible for listing on CRHR would be potentially significant. Mitigation Measure CUL-1 requires a professional archaeologist to conduct cultural resources sensitivity training and cessation of work within a 100-foot radius in the event of a cultural resource discovery. Work would not continue until a qualified archaeologist or cultural resources specialist has evaluated the resource and either determined the resource is not CRHR-eligible or completed treatment of a resource that is CRHR-eligible. With implementation of this mitigation measure, the project would not cause a substantial adverse change in the significance of a historical or archaeological resource. Impacts would be less than significant with mitigation.

Mitigation Measure CUL-1: Cultural Resources Sensitivity Training and Inadvertent Discovery

A professional archeologist shall provide sensitivity training to supervisory staff (County staff, biological monitor, and construction foreman) prior to initiation of site preparation and/or construction, to alert construction workers to the possibility of exposing significant historic and/or prehistoric archaeological resources within the project area. The training shall include a discussion of the types of prehistoric or historic objects that could be exposed and how to recognize them, the need to stop excavation at a discovery protection and notification. An "Alert Sheet" shall be posted in staging areas, such as in construction trailers, to alert personnel to the procedures and protocols to follow for the discovery of a potentially significant historic and/or prehistoric archaeological resources.

In the event of an unanticipated discovery of archaeological and/or historical deposits during project implementation, the County shall ensure that construction crews shall stop all work within 100 feet of the discovery until a qualified archaeologist can assess the previously unrecorded discovery and provide recommendations. A qualified cultural resource specialist/archaeologist shall inspect the discovery and determine whether further investigation is required. If the discovery can be avoided and no further impacts shall occur, the resource shall be documented on California State Department of Parks and Recreation cultural resource record forms and no further effort shall be required. If work must commence in the sensitive area, it can only be performed using hand tools or powered hand tools, cannot include ground disturbance below the topsoil layer, and can only be accessed on foot. Alternatively, the cultural resource specialist/archaeologist shall evaluate the resource and determine whether it is:

- Eligible for the CRHR (and a historical resource for purposes of CEQA), or

- A unique archaeological resource as defined by CEQA.

If the resource meets the criteria for either a historical resource or unique archaeological resource, work shall remain halted and the cultural resources specialist/archaeologist shall consult with the County staff regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA Guidelines Section 15064.5(b).

Avoidance of the area, or avoidance of impacts on the resource, is the preferred method of mitigation for impacts on cultural resources and shall be required unless there are other equally effective methods. Other methods to be considered shall include evaluation, collection, recordation, and analysis of any significant cultural materials in accordance with a Cultural Resources Management Plan prepared by the qualified cultural resource specialist/archaeologist. The methods and results of evaluation or data recovery work at an archaeological find shall be documented in a professional level technical report to be filed with California Historical Resources Information System.

Work may commence upon completion of evaluation, collection, recordation, and analysis, as approved by the qualified archeologist.

C) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant with Mitigation. No evidence of human remains was identified within the project area during the records search or pedestrian survey; however, the potential for the presence of human remains cannot be eliminated entirely. Disturbance of previously undiscovered human remains during construction would result in a potentially significant impact. In the event human remains are discovered, Mitigation Measure CUL-2 requires cessation of ground-disturbing work and adherence to appropriate excavation, removal, recordation, analysis, custodianship, and final disposition protocols, which would ensure that impacts remain less than significant. Therefore, this potential impact on human remains would be less than significant with mitigation.

Mitigation Measure CUL-2: Human Remains

In the event of an unanticipated discovery of human remains during project implementation, the County shall ensure that construction crews stop all work within 100 feet of the discovery. The County shall treat any human remains and associated or unassociated funerary objects discovered during soil-disturbing activities according to applicable State laws. Such treatment includes work stoppage and immediate notification of the Sonoma County Coroner, requisition of a qualified archaeologist, and in the event that the Coroner's determination that the human remains are Native American, notification of the Native American Heritage Commission (NAHC), according to the requirements in Public Resources Code (PRC) Section 5097.98. The NAHC would appoint a Most Likely Descendant (MLD). A qualified archaeologist, the County, and the MLD shall make all reasonable efforts to develop an agreement for the treatment, with appropriate dignity, of any human remains and associated or unassociated funerary objects (CEQA Guidelines Section 15064.5[d]). The agreement would take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, and final disposition of the human remains and associated or unassociated funerary objects. The PRC allows 48 hours to reach agreement on these matters. Work may recommence in the area of discovery following treatment of remains and any associated funerary objects.

Energy

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	☒
B) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

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

No Impact. The construction vehicles and equipment that would be used during construction of the project would consume energy through the combustion of petroleum products, including gas, diesel, and motor oil. Consumption of energy during construction would be temporary, lasting 6 to 8 months, and would cease after the project is completed.

Fuel use would be consistent with typical construction and manufacturing practices and would not require excessive or wasteful use of energy. Construction activities would not reduce or interrupt existing fuel or electricity delivery systems due to insufficient supply. The construction of the project would not result in environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. No impact would occur.

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

No Impact. The Sonoma County Open Space & Resource Conservation Element includes several goals, objectives, and policies designed to promote energy conservation and reduce energy demand. The goals identified do not apply to bridge replacement projects. The project involves construction activities related to bridge installation, roadway approaches realignment, and bridge demolition. The construction activities and operation of the proposed bridge would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. No impact would occur.

Geology and Soils

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most	☐	☐	☐	☒

recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				
ii) Strong seismic ground-shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
B) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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?	☐	☒	☐	☐
D) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☒	☐	☐
E) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
F) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

A) Would the project expose people or structures to 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?

No Impact. The project site is not within an Alquist-Priolo Fault Zone or traversed by a fault. The project site is 7.6 miles from the San Andreas fault, the nearest Alquist-Priolo Fault Zone (Taber Consultants, 2018). The proposed roadway approaches and replacement bridge would be designed to meet current California seismic structure codes and Caltrans seismic standards according to projected ground shaking. The users would not be subject to additional adverse effects cause by the rupture of a known earthquake zone. No impact from fault rupture would occur.

ii) Strong seismic ground shaking?

Less Than Significant Impact. Severe ground shaking has the potential to cause injury to construction workers during construction; however, no active fault zones underline the project site. The nearest faults are approximately 0.7 mile away (Taber Consultants, 2018). The potential for strong seismic shaking during the short (6 to 8 months) construction window is very low. Precautionary measures including adherence to state-mandated safety standards, including federal Occupational Safety and Health Administration (OSHA) regulations (29 Code of Federal Regulations [CFR] 1910.120) and Cal/OSHA regulations (8 CCR Title 8, Section 5192) during construction would minimize hazards to construction workers associated with strong seismic ground shaking. The probability of harm to workers would be minimal.

The proposed roadway approaches and replacement bridge would be designed to meet current California seismic structure codes and Caltrans seismic standards according to projected ground shaking (Seismic Design Criteria v.1.7 April 2013). The new structure would withstand most seismic shaking and would be substantially safer during a seismic event than the existing bridge. The impact from seismic shaking would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Loose and semi-compact granular soil susceptible to liquefaction are present underlying the project site. Groundwater was not observed beneath the project site during test borings (lowest depth 206 feet elevation; top of borings was 242 to 249 feet elevation). Groundwater levels and saturation of the creek bed are expected to fluctuate seasonally and could be encountered in deep foundation excavations (Taber Consultants, 2018).

The proposed roadway approaches and replacement bridge would be designed to meet current California seismic structure codes. The potential for detrimental liquefaction to affect the proposed bridge would be low (Taber Consultants, 2018). The new bridge would be substantially safer during a liquefaction event than the existing bridge. The proposed bridge has been designed to incorporate all necessary geotechnical recommendations, including appropriately sized and located piles, to ensure that liquefaction does not impact the bridge structure. The proposed roadway approaches and replacement bridge would also be designed to meet current California seismic structure codes and Caltrans seismic standards according to projected ground shaking. The impact would be less than significant.

iv) Landslides?

No Impact. The existing creek banks are steep, but the potential for seismic slope instability of the creek banks on the project site is low (Taber Consultants, 2018). Due to slope stability, construction of the project is not anticipated to increase landslide potential. No impact would occur.

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

Less Than Significant Impact. Construction of the project would involve grading and earthmoving activities, which would expose soils at the site and could result in soil erosion. Soils underlying the project site are primarily Blucher clay loam and Goldridge fine sandy loam. The erosion hazard varies from slight for Blucher clay loam to slight to moderate for Goldridge fine sandy loam (USDOA, 1972). The areas where soils would be temporarily exposed would be small. The project would involve up to 1.303 acre of surface disturbance through grading or soil stockpiling over the entire construction period. Soil erosion and topsoil loss would be limited by implementing standard construction practices and BMPs for erosion and sediment control, consistent with the Sonoma County General Plan Policy OSRC-11b, which requires erosion control measures for any discretionary project involving construction or grading near waterways. Required erosion control measures include protecting exposed slopes, installation of straw wattles, and protection of drainage inlets. The County would be required to enroll in coverage under the Construction General Permit, which requires preparation of a SWPPP for the project due to ground disturbance of greater than 1 acre. The SWPPP would contain soil stabilization and sediment control BMPs required to be implemented during construction. With implementation of these required measures, the impact from erosion would be less than significant.

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

Less Than Significant Impact with Mitigation. The project site is underlain by the Wilson Grove Formation and the west of the Great Valley complex. As analyzed in Impact A), soils susceptible to liquefaction occur beneath the project site, but the design of the proposed bridge incorporates all necessary geotechnical recommendations to minimize risk. New abutment foundations would be installed and the existing abutments removed, which could destabilize slopes due to excavation and use of heavy equipment. Up to 1,750 cubic yards of material could be needed for fill. Use of inadequate fill soils during construction could also lead to slope destabilization. Construction of the project could destabilize soils resulting in a significant impact. Mitigation Measure GEO-1 requires testing and use of fill material that meets appropriate standards to minimize potential for construction activities to result in slope destabilization. The impact would be less than significant with mitigation.

Mitigation Measure GEO-1: Fill Material Testing and Standards

The fill material recommendations in the final geotechnical evaluation conducted for the project foundations shall be implemented. Fill material recommendations include but are not limited to the following:

- Soils excavated on the project site shall be tested prior to use as fill
- Fill soils used shall have a low expansion potential (expansion index of equal to or greater than 50; sand equivalent of equal to or less than 20), 100 percent passing 3-inch sieve, as approved by a soils engineer

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

Less Than Significant Impact with Mitigation. Expansive soils generally occur when clay minerals expand during saturation and shrink in volume when dry. Blucher clay loam found in the project area has a high shrink-swell potential, but the Goldridge fine sandy loam has a low shrink-swell potential (USDOA, 1972). The soils tested from the borings did not qualify as expansive, but not all soils proposed for

excavation and potential use as fill were tested. Expansive soils, whether imported or native on the project site, have the potential to damage the new bridge, resulting in a significant impact. Mitigation Measure GEO-1 requires implementation of recommended design measures to ensure that fill soils are not expansive. The impact from expansive soil would be less than significant with mitigation.

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

No Impact. No septic tanks or alternative wastewater disposal systems would be constructed as part of the project. No impact would occur.

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

Less Than Significant with Mitigation. Fossils could occur in the geologic units underlying the project site. Wilson Grove Formation have been found to contain beds of mollusk and gastropodshell hash. Fossils from the Wilson Grove Formation range in age from late Miocene to late Pliocene, and fossils from the Great Valley complex are from the early Cretaceous (USGS, 2002). Paleontological resources could be unearthed during construction and damaged, resulting in a significant impact. Mitigation Measure GEO-2 requires implementation of training and cessation of work if a resource is uncovered. The project would have less than significant impact with mitigation.

> **Mitigation Measures GEO-2: Paleontological Resources Sensitivity Training and Inadvertent Discovery**
>
> A professional paleontologist shall provide sensitivity training to supervisory staff (County staff, biological monitor, and construction foreman) to alert construction workers to the possibility of exposing significant paleontological resources within the project area. The training shall be conducted to recognize fossil materials in the event that any are uncovered during construction.
>
> In the event that a paleontological resource is uncovered during project implementation, all ground-disturbing work within a 50-foot radius shall be halted. A qualified paleontologist shall inspect the discovery and determine whether further investigation is required. If the discovery can be avoided and no further impacts shall occur, no further effort shall be required. If the resource cannot be avoided and may be subject to further impact, a qualified paleontologist shall evaluate the resource and determine whether it is "unique" under CEQA, Appendix G, part V. If the resource is determined not to be unique, work may commence in the area. If the resource is determined to be a unique paleontological resource, work shall remain halted, and the paleontologist shall consult with County staff regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA. Preservation-in-place (i.e., avoidance) is the preferred method of mitigation for impacts to paleontological resources. If preservation-in-place is not feasible and avoidance is not possible, the fossils shall be recovered, prepared, identified, catalogued, and analyzed according to current professional standards under the direction of a qualified paleontologist. All recovered fossils shall be curated at an accredited and permanent scientific institution according to Society of Vertebrate Paleontology (SVP) standard guidelines. Work may commence upon completion of treatment.

Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
B) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of greenhouse gases?	☐	☐	☐	☒

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

Less Than Significant Impact. The greenhouse gas (GHG) emissions analysis considers both short-term construction and long-term operational impacts associated with a project. BAAQMD has adopted thresholds of significance that were designed to establish the level at which GHG emissions would cause significant environmental impacts under CEQA. The thresholds are included in the 2017 CEQA Air Quality Guidelines (updated May 2017) (BAAQMD, 2017).

As previously discussed, vehicle trips through the project site would not increase following completion of construction and no operational activities are proposed. The project would generate GHG emissions from temporary construction-related activities, including from heavy equipment, truck and worker trips, site preparation, and grading. Greenhouse gas emissions for project construction were calculated using CalEEMod 2016.3.2 based on the estimated construction schedule and anticipated equipment use for project construction. Construction activities would generate a total of 240 metric tons (MT) carbon dioxide equivalent (CO_2e) during 2020. BAAQMD does not have an adopted threshold of significance for construction-related greenhouse gas emissions; however, the threshold for operational impacts is 1,100 MT CO_2e per year. The 30-year amortized[9] construction GHG emissions would be 8 MT CO_2e, which would be less than the BAAQMD operational threshold of 1,100 MT CO_2e per year. The impact would be less than significant.

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

No Impact. The California Air Resources Board (CARB) prepared the Climate Change Scoping Plan (Scoping Plan) as directed by the Global Warming Solutions Act (Assembly Bill 32). The GHG reduction goals for California are to achieve 1990 levels by 2020 and 80 percent below 1990 levels by 2050. The Scoping Plan identifies actions for each sector (e.g., transportation, water, waste management) that California should take to meet its climate change goals. CARB prepared the Mobile Source Strategy, which identifies programs that the State and federal government have or will adopt to further the goals of the Scoping Plan.

The vehicles used during construction are required to comply with the applicable GHG reduction programs

[9] The 30-year amortization of construction emissions is consistent with industry standard practice.

for mobile sources in accordance with the Scoping Plan to achieve the State's GHG reduction targets. The project would conform with relevant programs and recommended actions detailed in the Scoping Plan and Mobile Source Strategy. The project would not conflict with regulations adopted to achieve the goals of the Scoping Plan.

The Regional Climate Action Plan (CAP), Climate Action 2020 and Beyond was prepared by the Regional Climate Protection Authority in collaboration with Sonoma County and local cities in July 2016. The CAP was developed to combine with state and regional actions to reduce community GHG emissions to 25 percent below 1990 levels by 2020 and make substantial progress towards reductions beyond 2020. The CAP identifies goals and implementation measures to address GHG emissions associated with the following sources: building energy; transportation, land use, and off-road equipment; solid waste; water and wastewater; and livestock and fertilizer (RCPA, 2016). Sonoma County adopted the goals and implementation measures identified in the CAP in May 2018 (County of Sonoma, 2018). The project would be designed and constructed in accordance with current Sonoma County codes and requirements, ensuring compliance with any GHG reduction measures. Construction of the project would not conflict with any existing GHG laws, plans, policies, or regulations. The impact would be less than significant.

Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
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?	☐	☒	☐	☐
C) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	☐	☐	☐	☒
D) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, create a significant hazard to the public or the environment?	☐	☐	☐	☒
E) For a project located within an airport land use plan or, where such a plan has not been adopted, within	☐	☐	☐	☒

2 miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project corridor?				
F) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
G) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☒	☐	☐

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

Less than Significant Impact. Construction equipment and vehicles would use a minimal amount of hazardous materials. Hazardous materials present during project construction may include gasoline, diesel fuel, hydraulic oils, equipment coolants, and any generated wastes that may include these materials. Gasoline and diesel fuel would be stored in small quantities at the staging areas during construction and fueling of some equipment and vehicles would be performed on-site. Although very few residences are located in the area, a hazard to the public or the environment could occur through the transport and use of hazardous materials on the project site. The County would be required to prepare a project-specific Stormwater Pollution Prevention Plan (SWPPP), which would include spill response and control measures. Given the minimal amount of hazardous materials used during construction and requirement of compliance with the spill control and response measures in the SWPPP, the risk to the public and environment from the routine transport, use, or disposal of hazardous materials would be less than significant.

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?

Less than Significant Impact with Mitigation. The existing bridge is painted and the existing paint has the potential to contain lead (LeCureaux, 2019). Lead-based paint could be released into the environment, including into Salmon Creek, during the disassembly and removal of the bridge. Deposition of lead contaminants into Salmon Creek and the surrounding environment would be a significant impact.

Mitigation Measure HAZ-1 requires the development and implementation of a Debris Collection and Containment Program, including a Lead Compliance Plan, which would prevent the accidental release of lead into the environment. The impact would be less than significant with implementation of mitigation.

Three existing wooden utility poles would be removed and replaced with new poles in a new location. Existing wood poles proposed for removal may have been chemically treated with creosote, pentachlorophenol, or other wood preservatives that require proper handling and disposal. Assembly Bill 1353 requires that treated wood waste be disposed of in a hazardous waste landfill or in a composite-lined portion of a RWQCB-approved solid waste landfill. Compliance with this state regulation would ensure proper disposal of wood poles. Nonetheless, soil around the existing poles may have been contaminated by leached chemicals from the poles and improper disposal of hazardous soils would be a significant impact. Mitigation Measure HAZ-2 requires the County to treat all soil excavated from existing utility pole holes as though it is contaminated and to dispose of soils at a properly permitted landfill in accordance with federal, state, and local regulations for contaminated soils. The impact would be less than significant with

mitigation.

Construction equipment and vehicles would use small amounts of hazardous materials including diesel fuel, gasoline, oil, and lubricants. Although a spill or leak of such materials is unlikely, because of the project's location adjacent to Salmon Creek, a spill or leak has the potential to contaminate the waterway. As stated under Impact A), spill response and control would be addressed in the SWPPP. Compliance with the spill control and response measures in the SWPPP would reduce the impacts from hazardous spills to less-than-significant level.

Mitigation Measure HAZ-1: Debris Collection and Containment Program

Sonoma County shall ensure that a Debris Collection and Containment Program is developed and implemented during project construction. The Program shall include a Lead Compliance Plan and shall ensure that painted bridge materials are treated as a hazardous material and handled in accordance with applicable provisions of Caltrans Standard Special Provisions (2018 or most recent) for the removal of lead paint, Provision 14-11.13, Disturbance of Existing Paint Systems on Bridges. The Program shall also require provisions to protect worker safety and health in compliance with Title 8 California Code of Regulations, including § 1532.1., and provisions for the proper handling and disposal of debris in accordance with all applicable Federal State and local hazardous waste laws.

The contractor shall be required to prepare and submit drawings to the County of the containment systems to be used. The containment system may include the following containment procedure or similar procedure that adequately prevents accidental release of lead paint into the environment:

- Local containment shall be installed prior to removing the bridge for the purpose of containing all paint flakes. Containment shall consist of using tarps to enclose the sides and bottoms of the existing trusses within 10 feet of the support locations and bridge pick-up points (i.e., locations that are used to connect equipment for the purpose of lifting the bridge).
- Where the existing paint is not flaking, the contractor shall have the option of applying a clear coat of paint instead of enclosing the trusses with tarps.
- Following installation of containment tarps and/or clear coat of paint, the existing bridge shall be lifted in one piece from its supports at the abutments and interior pier.
- Further truss disassembly, removal, transport and disposal shall be subject to existing laws and regulations.

Mitigation Measure HAZ-2: Contaminated Soil Disposal

If the County is responsible for removing and/or relocating existing utility poles during project construction, all soil that is excavated during the removal of existing utility poles shall be treated as hazardous materials and shall be transported and disposed of in compliance with federal, state, and local regulations. Excavated holes shall be backfilled with certified clean fill material.

C) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

No Impact. No schools are located within 0.25 mile of the project site. The nearest school is Salmon Creek Middle School located approximately 0.8 mile to the north of the project site. The project would not pose a hazard to schools.

D) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, create a significant hazard to the public or the environment?

No Impact. The project site is not located on a site included on a list of hazardous materials sites. The

project would not result in impacts associated with emissions from hazardous materials site.

E) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project corridor?

No Impact. The project site is not located within an airport use plan or within 2 miles of a public airport or public use airport. The project would have no impact associated with airport hazards.

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

No Impact. No adopted emergency response plan or emergency evacuation plan applies to the project area. The project would not impair or interfere with any adopted plan.

Refer to Transportation Impact D) for an analysis of impacts on emergency access.

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

Less than Significant with Mitigation. The project site is located in a State Responsibility Area (SRA) and spans the "moderate" and "high" fire severity zones (CAL FIRE, 2007). Construction equipment could create sparks and ignite a fire. Other potential fire hazards could include worker behavior such as smoking and disposal of cigarettes as well as parking or driving vehicles and equipment on dry vegetation. Mitigation Measure HAZ-3 requires proper fire hazards training and handling of potential ignition sources including vehicles and cigarettes. The impact from fire hazards would be less than significant with implementation of mitigation.

Mitigation Measure HAZ-3: Fire Prevention Procedures

Sonoma County and their contractor shall implement the following fire prevention procedures to reduce the potential risk of fire ignitions during construction:

- Prior to ground disturbing activities, all workers on the project site shall be trained regarding the proper handling and/or storage of materials posing a fire hazards, potential ignition sources (such as cigarettes or sparking equipment), and appropriate types and use of fire protection equipment.
- Fire suppression equipment, including fire extinguishers, water, and shovels, shall be available on-site at all times.
- All ignitions shall warrant a call to the fire department to ensure the ignition is fully extinguished.
- Vehicles shall not be parked in vegetated areas. If vegetated areas must be used for parking, vegetation shall be mowed to a height of less than 4 inches to avoid contact with the underside of vehicles.
- Smoking shall be allowed only inside fully-enclosed vehicles with closed windows. Cigarette butts shall be thoroughly extinguished, properly contained, and transported off-site for disposal.
- Hot work (welding, grinding, cutting, or any other activity that produces flame, sparks, or embers) shall be restricted during red flag warnings or potentially dangerous fire conditions, as determined by the County and communicated to the contractor.

Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐
B) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
C) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
D) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
E) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

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

Less Than Significant Impact. The project site is bisected by Salmon Creek and is located within the Salmon Creek Watershed (Gold Ridge Resource Conservation District, 2007). In 2012, the North Coast Regional Water Quality Control Board (RWQCB) evaluated turbidity in Salmon Creek for listing on the 303(d) list and concluded that Salmon Creek should not be placed on the section 303(d) list because of insufficient information on background turbidity levels within the water body (North Coast RWQCB, 2012). Salmon Creek and its tributaries are not currently listed on the 303(d) list of impaired waterbodies (SWRCB, 2018).

Construction activities would occur during the dry season when flows in Salmon Creek are low or not present. Construction of the project would require grading and other earth-disturbing activities. Excavated or imported materials could be stored on the project site. Gasoline and diesel fuel used in the equipment and vehicles could leak or spill. Pouring of concrete and demolition activities above and directly adjacent to the creek have the potential to generate waste and debris that could impact water quality. Dewatering may be required during excavation for the abutments. Dewatering discharge could impact water quality of the creek. Dewatering and construction activities could occur when low flows are present in Salmon Creek or during spring rain events, resulting in stormwater runoff releasing chemicals or sediments from the project site waterbodies in the vicinity.

Erosion and sedimentation would be limited by implementing standard construction practices and BMPs for erosion and sediment control, consistent with the Sonoma County General Plan Policy OSRC-11b, which requires erosion control measures for any discretionary project involving construction or grading near waterways, and Policy WR-1b, which requires bridges to be designed, constructed, and maintained to minimize sediment and other pollutants in stormwater flows. Required erosion control measures include protecting exposed slopes, installation of straw wattles, and protection of drainage inlets. The required SWPPP would stipulate BMPs to address dewatering discharge, sedimentation, concrete pouring, curing, and washout to impact water quality in the creek. The impact to water quality from construction, demolition, and dewatering activities would be minimized with implementation of temporary construction BMPs. The impact from violation of any water quality standard would be less than significant.

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

Less than Significant Impact. The project site is underlain by the Wilson Grove Formation Highlands groundwater basin. The basin underlying the project area is designated as Class 3, which is a "Marginal Groundwater Availability Area". The basin is not designated as a priority groundwater basin (Sonoma County, 2017). Water needed for dust suppression during construction would be obtained from an existing water source. Groundwater may comprise a portion or all of the water used for dust suppression; however, the quantity of water required would be limited to only what is needed to suppress fugitive dust during up to 8 months of construction. The maximum quantity of water required would be up to 78,000 gallons throughout the construction period.

The project would increase impervious surfaces by 0.19 acre. This incremental increase would be negligible compared to the 64,000-acre groundwater basin and the basin is very low priority (DWR, 2019). Groundwater supplies and groundwater recharge would not be substantially impacted by the project. The impact would be less than significant.

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

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

Less Than Significant Impact. The existing pier columns would be cut off at or above the ordinary high-water elevation and remain in place in Salmon Creek. The removal of this portion of the pier columns would not alter the drainage of the creek. The installation of new abutments and removal of the existing abutments would occur outside of the ordinary high-water mark and would not substantially alter the drainage of Salmon Creek. The existing piles and abutments would be removed and other activities would occur during construction, which could result in a temporary increase in siltation. LID stormwater improvements, including bioretention basins, rock-lined drains, and rock slope protection at stormwater outfall locations would involve minimal modification to ~~The~~ drainage patterns along the reconstructed segments of Freestone Flat Road and Scott Robin Road and would result in decreased erosion and siltation on and off site. ~~would remain the same as existing conditions.~~

The potential for construction activities along the banks of Salmon Creek to result in erosion and siltation of Salmon Creek is analyzed under Impact A). The project would not alter drainage patterns in a manner that could result in substantial erosion and siltation. The impact would be less than significant.

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

Less Than Significant Impact. The drainage patterns along Freestone Flat Road and Scott Robin Road would be modified to utilize dikes and superelevation to capture stormwater runoff and ensure that post-project runoff does not exceed pre-project runoff. The project would maintain overall drainage patterns in the project area and would not contribute to flooding on or off site. ~~remain the same as existing conditions. Drainage from the proposed bridge would sheet flow into Salmon Creek, similar to existing conditions.~~ The project would increase impermeable surfaces by 0.19 acre as a result of the paved roadway approaches and proposed bridge. The increase in impervious surfaces would be negligible compared to the 5 square-mile subwatershed and the 35 square-mile Salmon Creek watershed. The peak 100-year flow at the project site would not increase significantly due to the increase in impervious surfaces (WRECO, 2018).

The potential removal of the existing pier columns and increase in impervious surfaces would not substantially change drainage patterns in a manner that could result in flooding. The impact would be less than significant.

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

Less Than Significant Impact. ~~Similar to existing conditions, project runoff would drain directly into Salmon Creek from the new bridge and into outlets into the creek from the roadway approaches. Improvements to the existing roadway drainage infrastructure would be made if necessary.~~ The project is located in a rural setting where stormwater sheetflows from the existing Freestone Flat Road and Scott Robin Road to roadside drainage ditches or directly into Salmon Creek. No existing or planned municipal stormwater drainage systems would be impacted by the project. The project would increase impervious surfaces by 0.19 acre; however, the small increase would not contribute additional substantial sources of polluted runoff. LID stormwater improvements, including dikes, superelevation, and bioretention basins, have been incorporated into the project design to ensure that post-project stormwater runoff does not exceed pre-project runoff. Bioretention basins will treat stormwater discharge on site, reducing pollutants in runoff that leaves the project site. The potential for construction activities to impact water quality, including from polluted runoff, is analyzed under Impact A). The impact would be less than significant.

iv) impede or redirect flood flows?

Less Than Significant Impact. The project site is located within Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 06097C0695E, effective December 2, 2008 (FEMA, 2008). The FIRM indicates that the project site is located in an area classified by FEMA as unshaded Zone X, which represents areas that have a minimal flood hazard and are above the 500-year-flood level. No designated flood plains surround Salmon Creek within the project area. The existing pier columns would be cut to the height of the ordinary high-water mark and the pier columns above the ordinary high-water mark would be removed during construction, which would remove this existing barrier to water flow. The change in 100-year water surface elevation was modeled for the existing bridge compared to the proposed bridge. The proposed bridge would result in a maximum decrease in water surface elevation of 0.1 foot upstream compared to the existing bridge, assuming substantial alteration of the pier columns (WRECO, 2018). Because the existing pier columns would be cut off at the ordinary high-water elevation and would remain in place, the water surface elevation is not anticipated to change following completion of the project. The project would not impede or redirect flood flows. The impact would be less than significant.

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

No Impact. As discussed under Impact C, iv), the project site is located in an area classified as a minimal flood hazard (FEMA, 2008). No large water bodies occur in the project area and flooding would not inundate the project site. No impact would occur.

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

Less Than Significant Impact. The Water Quality Control Plan for the North Coastal Region (Basin Plan) identifies beneficial water uses, water quality objectives to protect the designated beneficial water uses, and strategies and time schedules to achieve water quality objectives. Water quality objectives for surface waters encompass features such as bacteria levels, sediment, pH, and temperature. Strategies include *Total Maximum Daily Loads* required by the Clean Water Act for waterbodies where water quality standards are not currently met.

A project could interfere with the Basin Plan by degrading water quality in such a way that water quality objectives or strategies are not met, and beneficial uses are adversely affected or not achieved. Salmon Creek, which is not listed as an impaired waterbody, is located within the Bodega Hydrologic Unit, which is included in the North Coastal Region Basin. The Basin Plan identifies beneficial uses for Salmon Creek and the downstream Bodega Bay. The potential for construction activities along the banks of Salmon Creek to result in erosion and siltation of Salmon Creek is analyzed under Impact A). Release of sediment and chemicals from the project site could conflict with the beneficial uses identified for Salmon Creek and ultimately Bodega Bay in the Basin Plan. Implementation of the erosion control measures required by Sonoma County and identified in the required SWPPP would minimize temporary impacts. The potential for operation of the proposed project to result in erosion, siltation, and increased pollution in stormwater runoff is discussed under Impact C). The project design incorporates LID improvements, including dikes, superelevation, and bioretention basins to capture and treat stormwater runoff before it discharges to surface waters. The impact from conflict with the Basin Plan would be less than significant.

Land Use and Planning

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒

A) Physically divide an established community?

No Impact. The existing roads and bridge would remain open during construction of the proposed bridge, with minimal short-term delays. The proposed bridge would provide the same access as the existing bridge for residents in the area. No impact to established communities would occur.

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

No Impact. The project would not change the zoning and land use designations, nor would the replacement of the existing bridge conflict with existing zoning and land uses. The project would not conflict with Sonoma County Zoning Regulations and would not impact applicable land use plans and policies.

Mineral Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
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?	☐	☐	☐	☒

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

No Impact. Sonoma County contains areas classified as Mineral Resource Zone (MRZ)-1, MRZ-2a, MRZ-2b, MRZ-3a, MRZ-3b, and MRZ-4 (CGS, 2005). Mining activities in Sonoma County are currently almost exclusively for extraction and processing of aggregate materials such as rock, sand and earth products for

use in construction and landscaping. No known mineral resource sites are located on the project site. The project site is not located in mineral resource zone (CGS, 2005). A mercury site is located in approximately 1.3 miles northeast of the project site (USGS, 2019). The project would not result in the loss of available known mineral resource or mineral resource recovery site. No impact would occur.

Noise

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Result in 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?	☐	☒	☐	☐
B) Result in generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
C) Expose people residing or working in the project area to excessive noise levels, 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?	☐	☐	☐	☒

Sonoma County prepared a Construction Noise Assessment to assess noise impacts generated by construction activities for the project. The Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) was used to calculate the maximum and average noise levels anticipated during each stage of construction. This noise impact analysis is based on the findings of the Construction Noise Assessment, which is included in Appendix C of this IS.

Existing Noise Environment

Background noise levels in the project vicinity are generally low and are mostly natural noises punctuated by occasional manmade noises. Noise sources include vehicles on Freestone Flat Road and Scott Robin Road. The ambient noise level on the project site is assumed to be typical of a quiet, rural region, between 30 and 50 dBA.

CEQA does not specify a numerical threshold for "substantial increases" in noise, and no federal regulations that limit overall environmental noise levels are established; however, federal guidance documents address environmental noise and regulations for specific sources.

The Environmental Protection Agency (EPA) published Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety in 1974. This document

provides information for state and local governments to use in developing their own ambient noise standards. The EPA determined that a day-night sound level of 55 dBA protects the public from indoor and outdoor activity interference.

The EPA, the FHWA, and the U.S. Department of Transportation (USDOT) have developed guidelines for noise. Under the authority of the Noise Control Act of 1972, the EPA established noise emission criteria and testing methods, published at 40 CFR Part 204, which apply to some construction and transportation equipment (portable air compressors and medium- and heavy-duty trucks). These regulations apply to trucks that would transport equipment to the project site.

Sonoma County has not established quantitative threshold for construction noise.

Groundborne Vibrations

Vibrating objects in contact with the ground radiate energy through the ground. Vibratory motion is commonly described by identifying the peak particle velocity (PPV). PPV is generally accepted as the most appropriate descriptor for evaluating the potential for building damage (Caltrans, 2004). Table 9 provides the vibratory thresholds for damage to structures, depending on the type of construction.

Background vibration levels on the project site are low. Sources include vehicles traveling on Freestone Flat Road and Scott Robin Road. These sources create negligible levels of vibration.

Table 9 Construction Vibration Damage Criteria

Building Category	PPV (inch per second [in/sec])
Reinforced-concrete, steel or timber (no plaster)	0.5
Engineered concrete and masonry (no plaster)	0.3
Non-engineered timber and masonry buildings	0.2
Buildings extremely susceptible to vibration damage	0.12

Source: (FTA, 2006)

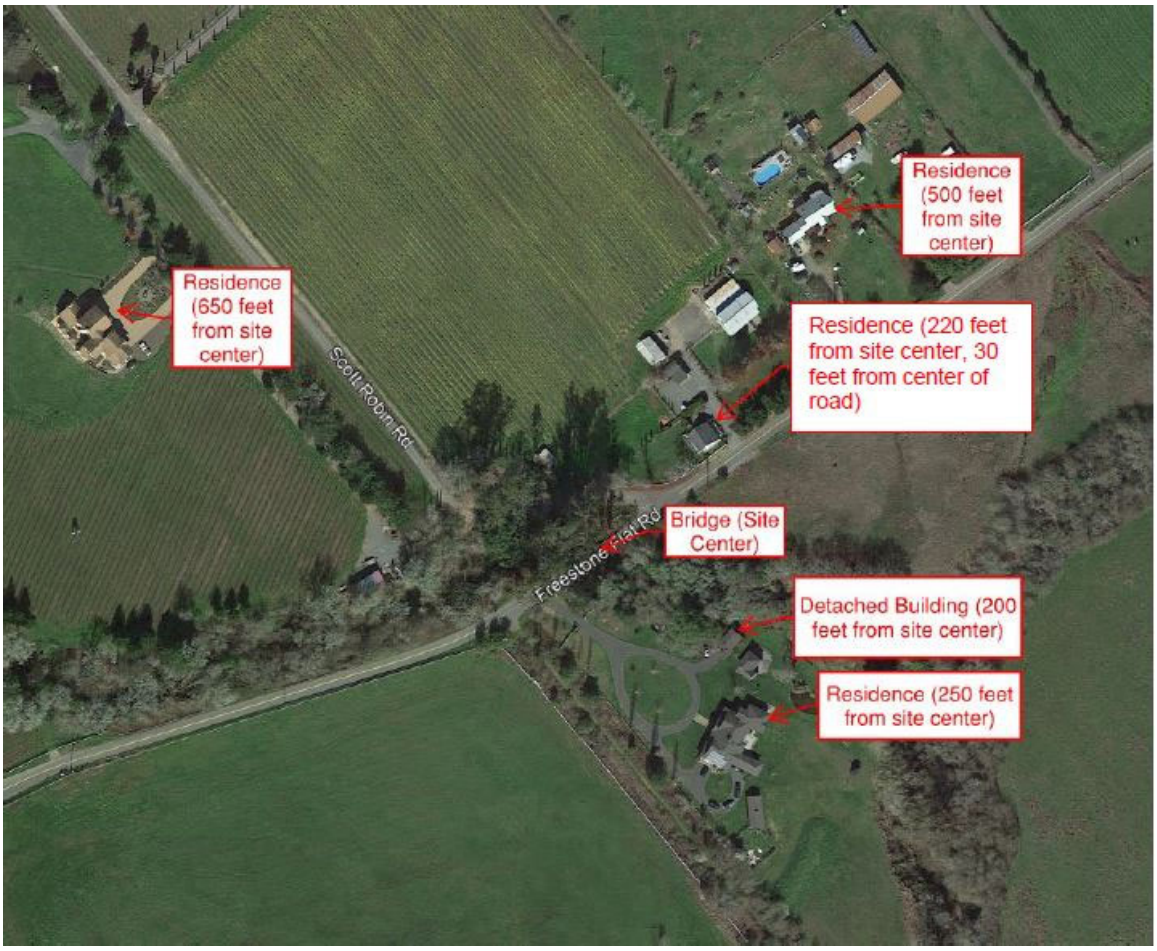
Caltrans recommends a vibration limit of 0.5 in/sec PPV for buildings structurally sound and designed to modern engineering standards, 0.3 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and conservative limit of 0.08 in/sec PPV for old buildings or buildings that are documented to be structurally weakened .

Sonoma County does not have established quantitative vibration limits to regulate construction-related vibration.

Sensitive Noise Receptors

Sensitive receptors are generally defined as land uses that are the most sensitive to noise intrusion. Sensitive receptors typically include hospitals, schools, libraries, and residences. As shown in Figure 11, the nearest sensitive receptor in the project vicinity is a residence approximately 220 feet from the center of the project site. Five residences are located within 1,000 feet of the project (Illingworth & Rodkin, Inc., 2019).

Figure 11 Sensitive Receptors in Project Vicinity



Environmental Impacts

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

Less Than Significant with Mitigation. Construction activities would generate a considerable amount of noise in the immediate project vicinity. Noise from vehicles, earth-moving operations, and heavy equipment would result in elevated ambient and intermittent noise levels. Noise impacts from construction depend on various factors, such as:

- the noise generated by various pieces of equipment,
- timing and duration of noise generating activities,
- the distance between construction noise sources and noise-sensitive receptors, and
- the noise environment in which the project would be constructed.

Noise generated during the construction period would vary on a day-to-day basis, depending on the specific activities being undertaken at any given time.

Heavy construction equipment would be used during construction of the project and may generate maximum noise levels up to approximately 88 dBA at a distance of 30 feet (Illingworth & Rodkin, Inc.,

2019). Noise levels attenuate at a rate of approximately 6 dBA per doubling of distance from the noise source. The nearest sensitive receptor is approximately 220 feet from the project site center. The loudest hourly noise levels (Leq) at the nearest sensitive receptor is expected to reach up to 74 dBA during construction of the realigned roadway, and reach up to 76 dBA during bridge demolition and wingwall construction (Illingworth & Rodkin, Inc., 2019). Temporary noise increases could negatively impact nearby residents if they were not informed of construction noise levels prior to construction. Implementation of Mitigation Measure NOI-1 requires notification of residents regarding anticipated noise levels and implementation of noise-reduction techniques. Implementation of Mitigation Measure NOI-1 would reduce the construction noise impacts to a less-than-significant level.

Table 10 Noise Level by Construction Stage at Distance of Nearest

Construction Stage	Maximum Noise Level (Lmax, dBA)				Hourly Average Noise Level (Leq[h], dBA)			
	30 ft.	220 ft.	250 ft.	500 ft.	30 ft.	220 ft.	250 ft.	500 ft.
Site Preparation	N/A	71	70	64	N/A	74	74	68
Roadway Approach Realignment	88	71	70	64	91	74	73	67
Approach Tie-ins	88	71	70	64	92	74	73	67
Bridge Demolition and New Bridge Wingwall	N/A	76	75	69	N/A	76	75	69
Site Restoration	N/A	71	70	64	N/A	72	71	65

Source: (Illingworth & Rodkin, Inc., 2019)

Mitigation Measure NOI-1: Noise Reduction Techniques

Sonoma County and their contractor shall implement the following noise reduction measures to reduce construction noise at nearby receptors:

- The contractor shall prepare a detailed construction plan identifying the schedule for major noise-generating construction activities and distribute this plan to adjacent noise sensitive receptors.
- Noise generating construction activities shall be restricted to between hours of 7:00 am to 7:00 pm Monday through Friday, 9:00 am to 7:00 pm Saturday. The contractor shall request of the Engineer at least 48 hours in advance of the contractor's intent to work on Sundays or holidays. The contractor shall notify the County if work is necessary outside of these hours. The County shall require the contractor to implement a construction noise monitoring program and, if feasible, provide additional mitigation as necessary (in the form of noise control blankets or other temporary noise barriers, etc.) for affected receptors.
- Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Unnecessary idling of internal combustion engines shall be strictly prohibited.
- Locate stationary noise generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project area.
- Utilize "quiet" air compressors and other "quiet" equipment where such technology exists.

B) Result in generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. Project construction would generate perceptible vibration in the immediate vicinity of the project site when heavy equipment or impact tools are used. Vibration levels would vary depending on soil conditions, construction methods, and equipment used. The potential for the highest vibration levels would occur during construction at the northern approach road when these activities occur at the nearest point to the residential structure located approximately 220 feet to the north of the bridge site center and 30 feet from the center of Freestone Flat Road. At 30 feet, vibratory rolling[10] would typically produce vibration levels of 0.17 in/sec PPV, below the 0.3 in/sec PPV threshold. Clam-shovel drops as close as 30 feet away from the nearest northern residence would also be expected to result in vibration levels of 0.17 in/sec PPV, below the 0.3 in/sec PPV threshold. Vibration levels from all other sources of vibration, including large bulldozers, would be well below the 0.3 in/sec PPV impact threshold for sound structures. Vibratory impacts to structures would be less than significant.

The level at which humans begin to perceive vibration is 0.015 in/sec. Vibrations at 0.2 in/sec are considered bothersome to most people, while continuous exposure to long-term PPV is considered unacceptable at 0.12 in/sec. At a distance of 30 feet from the center of Freestone Flat Road, the closest receptor may experience bothersome perceived vibration during short-term road work construction activities. At a distance of 220 feet from the site center, vibration levels at the closest receptor would typically be 0.02 in/sec PPV. Although vibration may be perceptible to the closest receptor at times, because of the short duration and relative infrequency of events the impact would be less than significant.

C) Expose people residing or working in the project area to excessive noise levels, 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?

No Impact. The project site is not located within 2 miles of a public airport or within an existing or projected airport land use plan. No impact would occur.

Population and Housing

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
B) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

[10] A vibratory roller is a piece of equipment used to compact soil, asphalt or other materials through the application of combined weight and vibrations to increase the load-bearing capacity of the surface.

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

No Impact. The project would not directly or indirectly induce growth in the area. The project involves replacement of an existing bridge. The new bridge and roadway would not provide an extension to new destinations beyond the current extent of the existing road. Construction is expected to last up to 6 to 8 months and would utilize a construction crew of up to 20 workers. The construction workers are anticipated to be local and would not require new or additional housing. No impact would occur.

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

No Impact. The project involves replacement of an existing bridge and would not displace any housing or people. No impact would occur.

Public Services

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

A) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services, such as fire protection, police protection, schools, parks, or public facilities?

No Impact. Fire and emergency response would be provided by the Occidental Volunteer Fire Department about 3 miles north of the project site. The nearest police station is location in Sebastopol, approximately 7 miles away from the project site. The nearest school to the project site is located in the community of Occidental, approximately 0.8 mile to the north. No parks or other public facilities are located on the project site or in the vicinity of the project.

The project would not result in substantial direct or indirect population growth during construction; therefore, a project-related increase in demand for public services related to population growth would not occur. Incidents requiring law enforcement, fire protection, or emergency medical services could occur during construction. Any incremental increase in demand for these services during construction would be temporary and would not require construction of new or physically altered facilities to maintain service ratios. No impact to governmental facilities would occur.

Recreation

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) 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?	☐	☐	☐	☒
B) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

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

No Impact. Freestone Flat Road ends at the intersection with Bohemian Highway at approximately 0.2 mile west of the bridge, and it has no outlet east of bridge. Freestone Flat Road serves rural residential areas in the project vicinity and does not provide access to any recreational facilities. Construction of the proposed project would not induce population growth nor increase the use of the existing parks or other recreational facilities such that physical deterioration of the facilities would occur or be accelerated. No impact would occur to recreational facilities.

B) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

No Impact. The project would not construct or necessitate the construction of any recreational facilities. No impact would occur.

Transportation

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Conflict with a program, plan, ordinance or policy addressing the circulations system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐

B) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
C) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
D) Result in inadequate emergency access?	☐	☒	☐	☐

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

Less than Significant Impact. Freestone Flat Road east of the project site has no outlet and serves rural residential areas. The estimated average daily traffic at the bridge is 121 vehicles, making it classified as a low-volume Rural Local Road . Scott Robin Road connects to Freestone Flat Road just east of the existing bridge with a single stop sign. Approximately 0.2 mile west of the bridge, Freestone Flat Road ends at the intersection with Bohemian Highway. Bohemian Highway is a major collector and designated as a Class III bikeway[11]. Freestone Flat Road and Scott Robin Road are local roads (Sonoma County, 2019). The local roadways are County-owned and operate at level of service (LOS) C or better during the weekday PM peak hour (Sonoma County, 2008). No pedestrian facilities, bus routes, or other transit options are located along Bohemian Highway, Freestone Flat Road, or Scott Robin Road.

During construction, workers vehicles and trucks traveling to and from the project site would temporarily increase traffic. Equipment would be staged on site, minimizing the need for daily transport of equipment. Trucks would haul materials to the site and waste off the site. Water trucks would travel to the site periodically. Local roadways would experience an increase of 4 to 32 one-way trips per day during the up to 8-month construction period, depending on the phase. Peak-hour vehicle trips are anticipated to be up to 14 one-way vehicle trips and construction traffic would travel on County-owned roadways that are not known to operate at LOS D or worse. As such, construction traffic is not anticipated to degrade the operations of any local roadway intersections to LOS E or worse, or roadway segments to LOS D or worse (County of Sonoma, 2016). The temporary, minimal increase in traffic would not conflict with County standards for roadways. Construction activities would not inhibit use of the Bohemian Highway by bicyclists. The project would not conflict with County circulation plans. The impact would be less than significant.

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

Less than Significant Impact. In accordance with the *Technical Advisory on Evaluating Transportation Impacts in CEQA*, Section 21099 of the Public Resources Code states that the criteria for determining the significance of transportation impacts must promote: (1) reduction of GHG emissions; (2) development of multimodal transportation networks; and (3) a diversity of land uses. The Office of Planning and Research identifies a screening threshold for small, land use projects as a project that generates or attracts fewer than 110 trips per day. Projects that generate fewer than this threshold may be assumed to cause a less-than-significant transportation impact (OPR, 2017).

[11] Provides shared use with pedestrians or motor vehicles.

Construction activities would generate a maximum of 32 one-way trips per day throughout the active construction period. The daily number of vehicle trips associated with the project would not exceed 110 trips per day, the Office of Planning and Research's screening threshold for conducting a vehicle miles traveled analysis.

The project would involve replacement of an existing bridge to serve the local traffic. Freestone Flat Road is a dead-end road and provides the only access for local residents and agricultural operations in the area. The bridge replacement would not induce vehicle travel or increases in vehicle miles traveled. The impact would be less than significant.

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

Less than Significant Impact. Traffic along Freestone Flat Road would generally be maintained throughout construction. Several construction activities may require brief roadway closures of 15 minutes or less, requiring signage and flagmen.

Significant construction activity would occur adjacent to an existing private driveway near the west end of the proposed bridge. The driveway would be temporarily realigned to ensure access for the resident is maintained during construction.

Excavation for the proposed abutments as well as the presence of construction equipment, workers, and vehicles in proximity to traffic may confuse or pose a distraction for drivers and would pose a hazard if a vehicle entered the active work area. Temporary traffic lane shifts, one-lane traffic control with flagging, signage, and temporary K-rails and crash cushions would be implemented during construction to separate traffic on the existing roadway from the new alignment and various construction activities to the south.

The impact on driver safety would be less than significant.

D) Result in inadequate emergency access?

Less Than Significant Impact with Mitigation. Freestone Flat Road provides the only means of ingress and egress for residences and commercial operations to the east of the existing bridge. The existing Freestone Flat Road Bridge would generally remain open during construction. Traffic delays and temporary closures (up to 15 minutes) could occur intermittently during certain construction activities, which could hinder emergency response. The impact from impeding emergency response could be significant. Mitigation Measure TRA-1 requires advanced notification of any temporary closures be provided to emergency service providers and ensures passage for emergency vehicles be maintained at all times through the project site. The impact to emergency access during project construction would be less than significant with mitigation.

Mitigation Measure TRA-1: Construction Traffic Control Measures

The contractor shall prepare and implement a Traffic Control Plan that includes the traffic safety measures listed below. The contractor shall submit the Traffic Control Plan to the County for review at least 14 days prior to construction.

- Traffic safety guidelines compatible with Section 12, "Temporary Traffic Control," of the Caltrans *Standard Specifications*, and the *California Manual on Uniform Traffic Control Devices* (*California MUTCD*) shall be implemented during construction. Project plans and specifications shall require provision of adequate signage and other precautions for public safety during project construction.
- Prior to temporary closures or lengthy delays, signs shall be placed at all entrances to the project

site and on major intersecting roads (e.g., Bohemian Highway and Freestone Flat Road) to notify motorists and bicyclists that traffic shall be subject to delay.

- Local emergency service providers (i.e., fire departments, police departments, ambulance, and paramedic services) shall be notified of the construction schedule and potential for delays prior to the start of construction.
- Emergency service providers and parcels along Freestone Flat Road and Scott Robin Road shall be notified of any temporary closures at least 5 days in advance of the closures. The contractor shall provide proof of the notification to the Sonoma County construction staff.
- The contractor shall allow passage of emergency vehicles through the project site at all times.
- The contractor shall maintain access to all driveways to parcels off the project site throughout project construction.

The contractor shall determine the construction schedule for local roadway improvement projects along the truck routes to and from the project site, particularly any lane and road closures. The contractor shall time large haul and material delivery truck trips to avoid traveling along routes where conflicts could occur due to ongoing roadway improvements.

Tribal Cultural Resources

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Cause a substantial adverse change in the significance of a tribal cultural resource, define 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 5020.1(k), or	☐	☒	☐	☐
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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe	☐	☒	☐	☐

A) Cause a substantial adverse change in the significance of a tribal cultural resource, define 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 5020.1(k), or

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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less Than Significant with Mitigation. No CRHR-eligible or listed resources are located within the project site, as discussed under Cultural Resources Impacts A) and B). Pursuant to Assembly Bill (AB) 52, formal notification letters were sent to representatives of nine Native American tribes with traditional or cultural affiliation to the project area. Table 11 summarizes the consultation efforts. Consultation with the nine Native American tribes was concluded on August 25, 2020.

Table 11 Summary of Tribal Consultation

Tribe	Date County Sent Notification	Consultation, if any, Concluded
Cloverdale Rancheria Band of Pomo Indians	December 11, 2019	Yes
Dry Creek Rancheria Band of Pomo Indians	December 11, 2019	Yes
Federated Indians of Graton Rancheria	November 19, 2019	Yes
Guidiville Indian Rancheria	December 12, 2019	Yes
Lytton Band of Pomo Indians	November 20, 2019	Yes
Middletown Rancheria Band of Pomo Indians	December 11, 2019	Yes
Mishewal Wappo Tribe of Alexander Valley	December 11, 2019	Yes
Stewarts Point Rancheria Kashia Band of Pomo Indians	November 20, 2019	Yes
Torres Martinez Desert Cahuilla Indians	December 11, 2019	Yes

The project would not impact a known listed or eligible tribal cultural resource. Previously undiscovered tribal cultural resources could be discovered during excavation and ground-disturbing activities. The impact would be potentially significant. Mitigation Measure TCR-1 requires a professional archaeologist to conduct cultural resources sensitivity training and cessation of work within a 50-foot radius in the event of a cultural resource discovery. The impact to undiscovered eligible tribal cultural resources would be less than significant with mitigation.

Mitigation Measure TCR-1: Tribal Cultural Resources Inadvertent Discovery

The training and Alert Sheet identified under Mitigation Measure CUL-1 shall also encompass tribal cultural resources. A Tribal Cultural Monitor shall attend the cultural sensitivity training to alert construction workers of potential tribal cultural resources that may occur in the project area.

In the event that an archaeological resource is discovered, ground-disturbing work shall be halted within 100 feet of the find, and a qualified Tribal Cultural Monitor shall be brought to the site. The qualified Tribal Cultural Monitor shall evaluate the resource and determine whether it is of special importance to a California Native American Tribe. If the resource is determined to not be of importance to the tribe, work may commence in the area.

If the resource meets the criteria for an important tribal resource, work shall remain halted within 100 feet of the find, and the qualified Tribal Cultural Monitor shall evaluate the resource and determine whether it is an important resource to the local Native American Tribe. If the resource is important to the tribe, work shall remain halted within 100 feet of the area of the find and the qualified Tribal Cultural Monitor shall consult with County staff regarding methods to ensure that no substantial adverse change would occur to the significance of the tribal cultural resource pursuant to PRC section 21084.3. Methods may include the following:

- Preservation-in-place (i.e., avoidance) is the preferred method of mitigation for impacts on tribal cultural resources.
- Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
- Protecting the cultural character and integrity of the resource
- Protecting the traditional use of the resource
- Protecting the confidentiality of the resource
- Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
- Protecting the resource.

Work in the area may commence upon completion of treatment, as approved by the County.

Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☒	☐	☐

B) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☒	☐
C) Result in a determination by the wastewater treatment provider that 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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
E) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☒	☐	☐

Environmental Impacts

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

Less Than Significant Impact with Mitigation. Water and electric power would be required for construction activities. Water for construction activities would be obtained from a local source and trucked to the project site. Electric power for construction activities would be provided by generators. The project would increase the impervious surfaces by approximately 0.19 acre. Surface runoff from the impervious surfaces would flow to the roadside ditches. The surface runoff would not change the existing drainage patterns. During construction, portable toilets would be transported to the project site for use by construction workers. The portable toilet waste generated during the construction period would be trucked to an appropriate wastewater treatment facility. The wastewater treatment facility would be able to accommodate this small quantity of waste and would not need to be expanded.

Three existing utility poles conveying distribution electricity and telephone utilities would be permanently replaced and relocated to accommodate the realignment of Freestone Flat Road. To accommodate the realignment of these utilities, two temporary poles would be installed during construction and removed after the three permanent utility poles are erected. Improvements to the existing roadway drainage

infrastructure would be made if necessary. The relocation of and improvements to utilities associated with implementation of the project are analyzed throughout the IS/MND. Relocation of the utility poles would require some tree removal and tree trimming. As analyzed under Biological Resources, Mitigation Measure BIO-6 (Nesting Bird Season Avoidance, Pre-Construction Surveys, and Monitoring) and Mitigation Measure BIO-13 (Tree Replacement and Monitoring Plan) would minimize any impacts related to relocation of the utility poles on biological resources. Implementation of the erosion control measures required by Sonoma County and identified in the required SWPPP would minimize temporary erosion and sedimentation impacts. The impact would be less than significant with mitigation.

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

Less Than Significant Impact. Construction of the project would require up to 78,000 gallons of water over the entire construction period (6 to 8 months). The total volume of water translates to up to 650 gallons of water per day, which is not a substantial amount of water. Water would be obtained from an existing source and trucked to the site daily. Potable water for on-site use would also be obtained from an existing source. Adequate water supplies are available under existing and future conditions due to the minimal volume of water that is required for the short duration of construction and the short-term water use. The project would have less than significant impact on available water supplies.

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

Less Than Significant Impact. Refer to the analysis under Impact A) above for a discussion of the need for portable toilets during construction. Construction of the project is expected to require a maximum of 20 workers per day for up to 8 months. Given the relatively small workforce and the short-term duration of construction, the project would not exceed wastewater treatment provider capacity and the impact would be less than significant.

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

Less Than Significant Impact. Grading activities during construction of the project could result in disposal of up to 1,750 cubic yards of cut soil and materials. Demolition activities would generate paint striping, concrete, wood, and metal waste. Materials would be disposed of at the Central Disposal Site, a Class III landfill that only accepts nonhazardous wastes. This landfill has approximately 9 million cubic yards of capacity remaining (CalRecycle, 2019a). Hazardous waste would be disposed at a Class I or Class II landfill (SWRCB, 2019). Hazardous construction waste from the project is anticipated to be disposed of at the Altamont Landfill & Resource Recovery (Class II and III landfill). The Altamont Landfill & Resource Recovery has approximately 65 million cubic yards of capacity remaining (CalRecycle, 2019b). Adequate capacity is available to accommodate the disposal of materials associated with the project. The impact on landfills would be less than significant.

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

Less than Significant Impact with Mitigation. The waste material generated during construction would be transported to an appropriate disposal location in accordance with federal, state, and local statues and regulations related to solid waste. As analyzed under Hazards and Hazardous Materials, some materials and cut soil may be contaminated. Improper disposal of contaminated materials would conflict with regulations pertaining to solid waste, resulting in a significant impact. Mitigation Measure HAZ-1 **(**Debris Collection and Containment Program) and Mitigation Measure HAZ-2 (Contaminated Soil Disposal) would ensure

that any contaminated soils and materials would be handled and disposed of at a properly permitted landfill. The impact would be less than significant with mitigation.

Wildfire

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
A) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
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?	☐	☒	☐	☐
C) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☒	☐	☐
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 site is located within an area designated as “moderate” and “high” fire hazard severity zones in the state responsibility area (CAL FIRE, 2007). The nearest very high fire hazard severity zone is 16 miles away from the project site.

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

No Impact. As analyzed under Hazards and Hazardous Materials Impact F), no adopted emergency response plan or emergency evacuation plan applies to the project area. The project would not impair an adopted emergency response or evacuation plans. Freestone Flat Road and bridge provide sole access for residences and commercial operations to the east of the existing bridge. The purpose of the bridge replacement project is to ensure that adequate access for emergency response and evacuation are maintained. The road and bridge would remain open at all times during construction of the proposed bridge. Emergency access or evacuation procedures would not be impaired as a result of the project. No impact would occur.

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?

Less than Significant Impact with Mitigation. As analyzed under Hazards and Hazardous Materials Impact G), there would be a small, temporary increase in on-site fire risk during construction due to the presence of construction workers and equipment. This temporary increase of wildfire risk could expose construction workers and residents to smoke or harm from a wildfire if one were ignited, resulting in a significant impact. Mitigation Measure HAZ-3 (Fire Prevention Procedures) requires proper fire hazards training and handling of potential ignition sources including vehicles and cigarettes, as well as restriction of construction during red flag warnings. Mitigation Measures HAZ-3 would minimize the risk of wildfire and subsequent exposure to wildfire-related harm. The impact would be less than significant with mitigation.

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

Less than Significant Impact with Mitigation. Three existing utility poles conveying distribution electricity would be relocated to accommodate the realignment of Freestone Flat Road. Power lines have the potential to arc to vegetation or equipment used during construction and cause a fire. A 15-foot radius would be cleared of vegetation around each pole. Ground-level vegetation would be allowed to reestablish following construction; however, trees would be trimmed to maintain a 15-foot radius around each pole to reduce fire risk potential for the relocated distribution line. Construction workers would follow OSHA standards for work around power lines, including maintaining a safe distance between equipment and power lines, to reduce potential for bodily harm and fire ignition potential. Construction activities associated with installation of the new bridge and relocation of the power lines could temporarily increase risk of wildfire ignition, as analyzed under Hazards and Hazardous Materials Impact G). Mitigation Measure HAZ-3 (Fire Prevention Procedures) would minimize the risk of wildfire. The impact from installation and relocation of infrastructure on fire risk and the environment would be less than significant with mitigation.

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?

Less than Significant Impact. Refer to Hydrology and Water Quality Impacts C), iii), and C), iv) for an analysis of impacts related to runoff and flooding. The project would not expose people or structures to significant risks associated with downstream flooding. The impact would be less than significant.

Mandatory Findings of Significance

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
B) 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)	☐	☒	☐	☐
C) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Environmental Impacts

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

Less Than Significant with Mitigation. Several common and special-status wildlife species are known to occur in Salmon Creek and the project area. The vegetation and wildlife communities that occur or could

occur within the project site also occur throughout the region. The replacement bridge would not restrict the range of any species.

Potential impacts to the habitat of wildlife species include sedimentation of the creek and removal of riparian and upland vegetation. Implementation of the erosion control measures as part of the SWPPP, along with implementation of Mitigation Measure BIO-9 (Riparian Mitigation and Monitoring Plan) and Mitigation Measure BIO-13 (Tree Replacement and Monitoring Plan), would minimize effects on wildlife habitat and communities. The impact would be less than significant with mitigation.

Construction of the project has the potential to result in significant impacts to special-status species as well as migratory birds. The range and distribution of the common and special-status fish and wildlife species that could occur on the project site is quite large relative to the size of the project site. Construction activities would occur when the flows in Salmon Creek are very low or the creek is dry, minimizing effects on in-water species. As such, the project would not cause a common fish or wildlife population to drop below self-sustaining levels. The impact would be less than significant.

No archaeological resources are recorded or were observed during a field survey within the APE (Caltrans, 2019a). No CRHR-eligible historic resources were found within the APE (Caltrans, 2019b). No impact to known important examples of California history or prehistory would occur. The possibility of encountering previously undiscovered archaeological or historic resources during construction cannot be eliminated and discovered resources may be eligible for listing on the CRHR. Implementation of Mitigation Measure CUL-1 (Cultural Resources Sensitivity Training and Inadvertent Discovery) would ensure that impacts would be less than significant.

B) 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).

Less Than Significant with Mitigation. Two cumulative projects within the vicinity of the project site are currently proposed by Sonoma County and are expected to occur in 2020. Both cumulative projects would involve road paving and are part of the Pavement Preservation Program that aims to maintain and improve road conditions in Sonoma County (County of Sonoma, 2019). One project would involve repaving Bohemian Highway from Bodega Highway to Bittner Road, approximately 830 feet west of the project site at the closest point, and the second project would involve repaving Barnett Valley Road from Burnside Road to Bodega Highway, approximately 1.3 miles east of the project site.

Potential impacts associated with the cumulative projects are primarily short-term (construction-related). Construction activities associated with the Bohemian Highway improvements could temporarily emit air pollutants and generate noise that could combine with the project at the receptor off Freestone Flat Road, west of the existing bridge. Improvements along Bohemian Highway would occur in a linear manner and only be located within 1,000 feet of this receptor for a short duration, limiting the potential for cumulative impacts.

Temporary impacts related to delays from lane closures, and construction equipment working along Bohemian Highway could occur. Large haul and material delivery trucks traveling to and from the project site could contribute to increased traffic hazards and delays along Bohemian Highway. The cumulative impact could be significant. Mitigation Measure TRA-1 requires the contractor to coordinate to ensure that large trucks traveling to the project site would not travel along routes when lane or road closures are proposed that could increase delays or hazards. The project's incremental contribution to cumulative traffic conditions during construction would be reduced to less than cumulatively considerable with mitigation.

C) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact with Mitigation. This Initial Study identifies potentially significant impacts related to: Agriculture and Forest Resources, Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Noise, Transportation, Tribal Cultural Resources, Utilities and Service Systems, and Wildfire. Mitigation measures have been identified in the resource impact discussions of this Initial Study to reduce all potentially significant impacts to a less-than-significant level. Impact determinations of "no impact" or "less-than-significant impact" were made for the following environmental issues: Aesthetics, Energy, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Population and Housing, Public Services, and Recreation. Therefore, with implementation of the mitigation measures specified this Initial Study, the proposed project would not result in substantial adverse effects, direct or indirect, on human beings.

REPORT PREPARERS

Sonoma County

John Leong, Department of Transportation & Public Works

Quincy Engineering, Inc.

Greg Young, Senior Engineer

Panorama Environmental, Inc.

Angie Alexander, Senior Manager

Rita Wilke, Project Manager

Caitlin Gilleran, Senior Environmental Planner

Yingying Cai, Environmental Planner

Sean Pagnon, Environmental Scientist

REFERENCES

BAAQMD. (2001, October 24). *Revised San Francisco Bay Area Ozone Attainment Plan for the 1-Hour National Ozone Standard.* Retrieved June 6, 2016, from San Francisco Bay Area Air Quality Management Plans: http://www.arb.ca.gov/planning/sip/planarea/bayareasip.htm

BAAQMD. (2017, May). CEQA Air Quality Guidelines.

CAL FIRE. (2007, November 7). Sonoma County Fire Hazard Severity Zones in SRA.

California Department of Conservation. (2015). 2015 Farmland Conversion Report. Retrieved from https://www.conservation.ca.gov/dlrp/fmmp/Pages/FMMP_2010-2012_FCR.aspx

CalRecycle. (2019a, November 22). *SWIS Facility Detail - Central Disposal Site* . Retrieved from https://www2.calrecycle.ca.gov/swfacilities/Directory/49-AA-0001/

CalRecycle. (2019b, November 22). *SWIS Facility Detail - Altamount Landfill & Resource Recovery* . Retrieved from https://www2.calrecycle.ca.gov/swfacilities/Directory/01-AA-0009/

Caltrans. (2004, June). *Transportation- and Construction-Induced Birbration Guidance Manual.* . Retrieved from https://dot.ca.gov/programs/environmental-analysis

Caltrans. (2019a, July). Archaeological Survey Report. *Freestone Flat Road Bridge at Salmon Creek, Bridge Replacement Project*.

Caltrans. (2019b, July). Historic Resources Evaluation Report. *Freestone Flat Road Bridge at Salmon Creek Bridge Replacement Project*.

CDC. (2013). Sonoma County Williamson Act FY 2013/2014.

CDF, USGS, Sonoma Ecology Center: Compiled by County of Sonoma ISD GIS Central. (2003). Stream Polyline GIS dataset. *SCGISDB2_BASE_HYD_USGSSTRM*.

CDFW. (2018, March 20). Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities .

CDFW. (2019). *CNDDB Rarefind 5.* Retrieved from https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data

CGS. (2005). Mineral Land Classification of Aggregate Materials in Sonoma County, California .

City of Santa Rosa. (2021, June). Low Impact Development Technical Design Manual.

CNPS. (2019). *Rare Plant Program.* Retrieved from Inventory of Rare and Endangered Plants of California, online edition, v8-03 0.39: http://www.rareplants.cnps.org

County of Sonoma. (2016, May). Guidelines for Traffic Impact Studies.

County of Sonoma. (2018, May 8). Resolution #18-1066 of the Board of Supervisors of the County of Sonoma, State of California.

County of Sonoma. (2019). Pavement Plans & Construction District 5.

County of Sonoma. (2019, January). Visual Assessment Guidelines. Retrieved November 24, 2019, from https://sonomacounty.ca.gov/PRMD/Regulations/Environmental-Review-Guidelines/Visual-Assessment-Guidelines/

County of Sonoma. (2020b, February 14). ROW Exhibit - Freestone Flat Bridge Replacement Project.

County of Sonoma GIS Central. (2019, June 16). Parcels GIS dataset. Santa Rosa, California.

County of Sonoma ISD GIS Central. (2001). Sonoma County Centerline GIS dataset. *GIS_MAIN.BASE.TRA_STREETS*.

County of Sonoma, Permit and Resource Management Department (PRMD). (2012). Sonoma County Zoning Regulations GIS dataset. *Zoning by Aera*.

DigitalGlobe. (2018, October 24). Aerial Imagery.

DWR. (2019, April). Sustainable Groundwater Management Act 2019 Basin Prioritization.

FEMA. (2008, December 2). Flood Insurance Rate Map: Sonoma County, California and Incorporated Areas. *Panel 695 of 1150*.

FTA. (2006, May). *Transit Noise and Vibration Impact Assessment.* Retrieved from https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf

Gold Ridge Resource Conservation District. (2007, April 16). The Draft Salmon Creek Watershed Assessment and Restoration Plan.

Illingworth & Rodkin, Inc. (2019, August 8). Freestone Flat Road Bridge Replacement Project Construction Noise and Vibration Assessment.

Johnston, D., Tatarian, G., & Pierson, E. (2004, December 29). California Bat Mitigation Techniques Solutions, and Effectiveness . Caltrans.

LeCureaux, J. (2019, August 13). Freestone Flat Road Bridge Replacement, Federal Project Number BRLO 5920 (127). *Technical Memorandum: Hazardous Materials*.

NMFS. (2016). *Species List - Intersection of USGS Topographic Quadrangles with NOAA Fisheries ESA Listed Species, Critical Habitat, Essential Fish Habitat, and MMPA Species Data.*

NOAA. (1997, November 25). Designated Critical Habitat; Central California Coast and Southern Oregon/Northern California Coast Coho Salmon. *Federal Register Vol. 62, No. 227*.

NOAA. (2005, September 2). Critical Habitat Central California Coast Steelhead.

NOAA. (2014a). Coho Salmond West Coast States Essential Fish Habitat.

NOAA. (2014b). Chinook Salmon West Coast States Essential Fish Habitat .

North Coast RWQCB. (2012). *Final California 2012 Integrated Report (303(d) List/305(b) Report)*. https://www.waterboards.ca.gov/water_issues/programs/tmdl/2012state_ir_reports/00647.shtml

OEHHA. (2015, February). Air Toxics Hot Spots Program. Risk Assessment Guidelines.

Quincy Engineering . (2017, March). Project Report Freestone Flat Road over Salmon Creek Bridge Replacement Project .

Quincy Engineering. (2022, March). Freestone Flat Road Bridge Replacment 65% Design Plan.

RCPA. (2016, July). Climate Action 2020 and Beyond. *Sonoma County Regional Climate Action Plan*.

Sonoma County . (2019, September 12). Draft Freestone Flat Road Bridge (20C-0440) Replacement Over

Salmon Creek Plant and Wetland Surveys and Wildlife Habitat Assessment .

Sonoma County. (2008, September 23). Figure CT-3 Level of Service (LOS) Objectives. *Sonoma County General Plan 2020 Circulation and Transit Element*.

Sonoma County. (2008). Sonoma County General Plan 2020 Land Use Element.

Sonoma County. (2017, February 23). Procedures for Groundwater Analysis and Hydrogeologic Reports.

Sonoma County. (2019). Functional Classification GIS Map.

Sonoma County. (2019, November 14). *Riparian Corridor (RC) Combining Zone*. Retrieved from Sonoma County RPMD Regulation: https://sonomacounty.ca.gov/PRMD/Regulations/Riparian-Corridors/

Sonoma County. (2020, March). Flood Management Design Manual.

Sonoma County Water Agency, Sonoma County Agricultural Preservation and Open Space District, Sonoma County Vegetation Mapping and LiDAR Program. (2017, May 19). Sonoma County Vegetation Survey GIS dataset. *SonomaVegMap_5_1_Delivered*. Santa Rosa: Sonoma County Agricultural Preservation & Open Space District.

SWRCB. (2018, April 6). *2014 and 2016 California Integrated Report*. Retrieved from Clean Water Act Section 303(d) List/ 305(b) Report: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml

SWRCB. (2019, November 22). *Land Disposal Program - Wastes Allowed for Discharge at Disposal Facilities*. Retrieved from https://www.waterboards.ca.gov/water_issues/programs/land_disposal/walist.html

Taber Consultants. (2018, January 17). Draft Foundation Report Freestone Flat Road Bridge at Salmon Creek.

Tele Atlas North America, Inc. (2018). U.S. and Canada Detailed Streets GIS dataset. *ESRI® Data & Maps: StreetMap™*. ESRI.

U.S. Geological Survey. (2016). National Hydrography Dataset Waterbodies GIS dataset.

US Geological Survey. (2013). USGS NED 1/3 Arc Second DEM Raster dataset.

USDOA. (1972, May). Soil Survey Sonoma County, California.

USFWS. (2019). *Official Species List; Consultation Code 08ESMF00-2019-SLI-2616.*

USGS. (2002). Geologic Map and Map Database of Western Sonoma, Northernmost Marin, and Southernmost Mendocino Counties, California.

USGS. (2016). US National Atlas Federal Land Areas.

USGS. (2019, August 12). *Mineral Resources Data System* . Retrieved from https://mrdata.usgs.gov/mrds/map-us.html

WRECO. (2018, June). Draft Location Hydraulic Study Report. *Freestone Flat Road at Salmon Creek Bridge Replacement Project*.

This page is intentionally left blank.

APPENDIX A – MITIGATION MONITORING AND REPORTING PROGRAM

Project Summary

The project includes replacing existing Freestone Flat Road Bridge over Salmon Creek (Bridge Number 20C0440) with a new bridge 24 feet south of the existing bridge location. The bridge is located in an unincorporated area of southwestern Sonoma County, approximately 0.6 mile northwest of the community of Freestone, and 5 miles west of the City of Sebastopol. The project would involve construction of a new parallel two-lane bridge adjacent to and downstream of the existing bridge. The new bridge would be approximately 106 feet long and would fully span the creek channel. The bridge would have a total width of approximately 26 feet, composed of two 9-foot-wide lanes and 2-foot-wide shoulders, and approximately 2-foot-wide concrete bridge barriers with rails on each side of the bridge. The bridge barriers would be constructed of concrete with a galvanized tubular metal handrail mounted on top. Concrete bridge abutments would be supported on cast-in-drilled-hole concrete piles, which would be approximately 24 inches in diameter, with approximately 8 piles per abutment. Freestone Flat Road and Scott Robin Road would be realigned to connect with the new bridge location. The existing bridge would be left in place to maintain traffic flow and access during construction. Once the new bridge is constructed, traffic would be routed onto the new bridge and the existing bridge would be removed.

This Mitigation Monitoring and Reporting Program (MMRP) outlines procedures for the implementation of mitigation measures identified in the Freestone Flat Road Bridge Replacement Project Initial Study/Mitigation Negative Declaration (IS/MND) to avoid or reduce all potential environmental effects of the project to less than significant levels. Sonoma County Department of Transportation and Public Works (the County) and its contractors must fully comply with the conditions and measures described in this MMRP.

Mitigation Monitoring and Reporting Requirements

The County prepared an IS to identify and evaluate potential environmental impacts associated with the Freestone Flat Road Bridge Replacement Project. Mitigation measures are defined in the Is to reduce potentially significant impacts of project construction and operation. All measures designated as mitigation measures reduce potential impacts to the associated resource to less than significant levels.

Approval of the project will require implementation and monitoring of all the mitigation measures identified in the IS. The California Environmental Quality Act (CEQA) Section 15097(a) requires that:

> "… In order to ensure that the mitigation measures and project revisions identified in the EIR or negative declaration are implemented, the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program."

CEQA Section 15097(c) defines monitoring and reporting responsibilities of the lead agency.

> "(c) The public agency may choose whether its program will monitor mitigation, report on mitigation, or both. "Reporting" generally consists of a written compliance review that is presented to the decision making body or authorized staff person. A report may be required at various stages during project implementation or upon completion of the mitigation measure. "Monitoring" is generally an ongoing or periodic process of project oversight. There is often no clear distinction between monitoring and reporting and the program best suited to ensuring compliance in any given instance will usually involve elements of both. The choice of program may be guided by the following:
>
> > (1) Reporting is suited to projects which have readily measurable or quantitative mitigation measures or which already involve regular review. For example, a report may be required upon issuance of final occupancy to a project whose mitigation measures were confirmed by building inspection.
> >
> > (2) Monitoring is suited to projects with complex mitigation measures, such as wetlands restoration or archeological protection, which may exceed the expertise

> of the local agency to oversee, are expected to be implemented over a period of time, or require careful implementation to assure compliance.
>
> (3) Reporting and monitoring are suited to all but the most simple projects. Monitoring ensures that project compliance is checked on a regular basis during and, if necessary after, implementation. Reporting ensures that the approving agency is informed of compliance with mitigation requirements."

This MMRP is meant to facilitate implementation and monitoring of the mitigation measures to ensure that measures are executed. This process protects against the risk of non-compliance.

The purpose of the MMRP is to:

- Summarize the mitigation required for the project
- Comply with requirements of CEQA and the CEQA Guidelines
- Clearly define parties responsible for implementing and monitoring the mitigation measures
- Provide a plan for how to organize the measures into a format that can be readily implemented by the County and monitored

MMRP Components

The MMRP provides a summary of all mitigation measures that will be implemented for the project. The mitigation measures are organized into three tables based on the timeframe for implementation:

- Table A-1: Mitigation Measures – Prior to Construction
- Table A-2: Mitigation Measures – During Construction
- Table A-3: Mitigation Measures – After Construction

Mitigation measures could be applicable during one or more implementation phase. Each mitigation measure is accompanied with identification of:

- Application Locations – locations where the mitigation measures will be implemented.
- Monitoring/Reporting Action – the monitoring and/or reporting actions to be undertaken to ensure the measure is implemented.
- Responsible and Involved Parties – the party or parties that will undertake the measure and will monitor the measure to ensure it is implemented in accordance with this MMRP

The responsible and involved parties will utilize the MMRP to identify actions that must take place to implement each mitigation measures, the time of those actions and the parties responsible for implementing and monitoring the actions.

Table A-1 Mitigation Measures – Prior to Construction

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
Mitigation Measure BIO-1: Worker Environmental Awareness Program (WEAP) A Service-approved biologist will conduct employee education training for employees working on earthmoving and/or construction activities. Personnel will be required to attend the presentation, which will describe the Federal and State statutes protecting threatened, endangered, and special-status species that may be encountered on site; minimization and conservation measures; legal protection of species; and other related issues. Specifically, the WEAP shall include a description of all species identified as having moderate potential to occur in Table 7 of this IS/MND, the areas on site where they may occur, and any mitigation required to reduce impacts on those species. All attendees will sign an attendance sheet along with their printed name, company or agency, email address, and telephone number. The original sign-in sheet will be sent to the Service within seven (7) calendar days of the completion of the training.	N/A	• Approved biologist provides education training to construction personnel • Construction personnel attends training • The County submits sign-in sheet to the Service	• Approved biologist • The County • Construction personnel • The Service
Mitigation Measure BIO-2: Qualified Biologist A biologist(s) approved by the United States Fish and Wildlife Service (Service) and CDFW will be on-site during ground disturbance activities (e.g., grading and vegetation removal) that may result in take of state or federally threatened and endangered species. The qualified biologist must have experience with identifying all federal and state-listed species, as well as special-status species, with potential to occur as determined in Table 7 of this IS/MND. The biologist shall have specific experience identifying western yellow-billed cuckoo and California red-legged frog during all distinct life stages and experience with implementing conservation and other avoidance and minimization measures for these species and interacting with contractors and construction workers to ensure these measures are enforced. The qualifications of the biologist(s) will be submitted to the Service for review and written approval at least thirty (30) calendar days prior to the date earthmoving is initiated at the project site.	N/A	• The County submits the biologist(s) qualification to the Service for review	• Approved biologist • The County • The Service
Mitigation Measure BIO-3: California Red-Legged Frog Avoidance, Pre-Construction Survey and Biological Monitoring	All project areas	• Approved biologist conducts Pre-Construction survey	• Approved biologist • The County

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
The County and their contractor shall implement the following measures to reduce or avoid impacts to California red-legged frog: • **Pre-Construction Survey.** No more than twenty-four (24) hours prior to the date of initial ground disturbance, a pre-construction survey for the California red-legged frog will be conducted by a Service-approved biologist at the project site. The survey will consist of walking the project limits and within the project site to ascertain the possible presence of the species. The Service-approved biologist will investigate all potential areas that could be used by the California red-legged frog for feeding, breeding, sheltering, movement, and other essential behaviors. This includes an adequate examination of mammal burrows, such as California ground squirrels or gophers. If any adults, subadults, juveniles, tadpoles, or eggs are found, the Service-approved biologist will contact the Service to determine if moving any of the individuals is appropriate. In making this determination the Service will consider if an appropriate relocation site exists. If the Service approves moving animals, the County will ensure the Service-approved biologist is given sufficient time to move the animals from the work site before ground disturbance is initiated. Relocation would be completed in accordance with the procedures defined in this mitigation measure, below. Only Service-approved biologists will capture, handle, and monitor the California red-legged frog. • **Construction Timing.** To the extent practicable, initial ground-disturbing activities will be avoided between November 1 and March 31 because that is the time period when California red-legged frogs are most likely to be moving through upland areas. When ground-disturbing activities must take place between November 1 and March 31, Sonoma County will ensure that daily monitoring by the Service-approved biologist is completed for the California red-legged frog. To the maximum extent practicable, no construction activities will occur during rain events or within 24-hours following a rain event (with greater than 0.1 inch of rainfall). Prior to construction activities resuming after a rain event non-work period, a Service- approved biologist will inspect the action area and all equipment/materials for the presence of California red-legged frogs. Any California red-legged frog encountered will be allowed to move away from the project site of their own volition or moved only by the Service-approved biologist		for California red-legged frog no more than 24 hours prior to the date of initial ground disturbance	• Construction contractor • The Service

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
in accordance with the procedures for California red-legged frog relocation defined below. • **California Red-Legged Frog Relocation.** Each encounter with the California red-legged frog will be treated on a case-by-case basis in coordination with the Service, but the general procedure is as follows: (1) the animal will not be disturbed if it is not in danger; or (2) the animal will be moved to a secure location if it is in any danger. These procedures are further described below: a. When a California red-legged frog is encountered in the action area, all activities which have the potential to result in the harassment, injury, or death of the individual will be immediately halted. The Service-approved biologist will then assess the situation in order to select a course of action that will avoid or minimize adverse effects to the animal. To the maximum extent possible, contact with the frog will be avoided and the applicant will allow it to move out of the potentially hazardous situation to a secure location on its own volition. This procedure applies to situations where a California red-legged frog is encountered while it is moving to another location. It does not apply to animals that are uncovered or otherwise exposed or in areas where there is not sufficient adjacent habitat to support the species should the individual move away from the hazardous location. b. California red-legged frogs that are in danger will be relocated and released by the Service- approved biologist outside the construction area within the same riparian area or watershed. If relocation of the frog outside the fence is not feasible (i.e., there are too many individuals observed per day), the biologist will relocate the animals to a Service pre- approved location. Prior to the initial ground disturbance, Sonoma County will obtain approval of the relocation protocol from the Service in the event that a California red- legged frog is encountered and needs to be moved away from the project site. Under no circumstances will a California red-legged frog be released on a site unless the written permission of the landowner has been obtained by Sonoma County. The Service-approved biologist will limit the duration of the handling and captivity of the California red-legged frog to the minimum amount of time necessary to complete the task. If the animal must be held in capacity, it will			

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
be kept in a cool, dark, moist, aerated environment, such as a clean and disinfected bucket or plastic container with a damp sponge. The container used for holding or transporting the individual will not contain any standing water. c. Sonoma County will immediately notify the Service once the California red-legged frog and the site is secure. The contact for this situation is the Coast Bay Division Chief of the Endangered Species Program by email and at telephone (916) 414-6623. • **Avoid Entrapment** – Plastic monofilament netting (erosion control matting), loosely woven netting, or similar material in any form will not be used at the project site because California red-legged frogs can become entangled and trapped in them. Any such material found on site will be immediately removed by the Service-approved biologist, construction personnel, or the applicant. Materials utilizing fixed weaves (strands cannot move), polypropylene, polymer or other synthetic materials will not be used. – Loss of soil from run-off or erosion will be prevented with straw bales, straw wattles, or similar means provided they do not entangle, block escape or dispersal routes of California red-legged frog. – Trenches or pits one (1) foot or deeper that are going to be left unfilled for more than forty- eight (48) hours will be securely covered with boards or other material to prevent the California red-legged frog from falling into them. If this is not possible, Sonoma County and their contractor will ensure wooden ramps or other structures of suitable surface that provide adequate footing for the California red-legged frog are placed in the trench or pit to allow for their unaided escape. Auger holes or fence post holes that are greater than 0.10 inch in diameter will be immediately filled or securely covered so they do not become pitfall traps for the California red-legged frog. The Service-approved biologist will inspect the trenches, pits, or holes prior to their being filled to ensure there are no California red-legged frogs in them. The trench, pit, or hole also will be examined by the Service-approved biologist each workday morning at least one hour prior to initiation of work and in the late afternoon no more than one hour after work has ceased to ascertain whether any individuals have			

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
become trapped. If the escape ramps fail to allow the animal to escape, the Service-approved biologist will remove and transport it to a safe location, or contact the Service for guidance.			
Mitigation Measure BIO-4: Exclusion Fencing Temporary exclusion fencing shall be installed around the limits of work areas and access routes to avoid disturbance in unauthorized areas and ensure California red-legged frog or western pond turtle cannot enter the work area after construction commences. Installation of exclusion fencing shall occur under the supervision of the qualified biologist and immediately following a clearance survey of the area. The exclusion fencing shall have a minimum aboveground height of 30 inches, and the bottom of the fence shall be keyed in at least 4 inches deep and backfilled with soil to prevent wildlife from passing under the fencing. Exclusion fencing shall be installed to prevent species entry into active work areas and to mark the limits of construction disturbance at equipment staging areas, site access routes, construction equipment and personnel parking areas, debris storage areas, and any other areas that may be disturbed. The exclusion fencing shall specifically exclude any areas within the limits of the Salmon Creek ordinary high-water mark and wetted areas of the creek, whichever is higher in elevation.	All project areas	• Install exclusion fencing	• Construction contractor
Mitigation Measure BIO-5: Pre-Construction Survey and Biological Monitoring for Western Pond Turtle The County and their contractor shall implement the following measures to reduce or avoid impacts to western pond turtle: • A preconstruction survey for western pond turtle shall occur within 48 hours prior to the start of construction activities within the riparian and aquatic habitat in the BSA. • A qualified biologist will be present during grubbing and clearing activities in the riparian and aquatic habitat in the BSA to monitor for western pond turtle. • If a western pond turtle is observed in areas of active construction, construction will cease and a qualified biologist will be notified. Construction may resume when the biologist has either relocated the western pond turtle to nearby suitable habitat outside the limits of project construction, or, after thorough inspection,	Riparian and aquatic habitat in the BSA	• Qualified biologist conducts pre-construction survey for western pond turtle within 48 hours prior to start of construction activities	• Qualified biologist • Construction contractor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
determined that the western pond turtle has moved away from the area of active construction.			
Mitigation Measure BIO-7: Discourage Bird Nesting on Bridge To discourage bird nesting on the existing bridge during construction, existing inactive bird nests on the Freestone Flat Road Bridge shall be removed prior to the onset of construction, between September 1 and February 14 (outside of the nesting season). Following removal of inactive nests, nest deterrent measures shall be installed on the existing bridge to prevent establishment of new nests. Techniques to prevent nest establishment include using exclusion devices (see below), removing and disposing of partially constructed and unoccupied nests of migratory or nongame birds on a regular basis to prevent their occupation, or performing any combination of these techniques. • *Exclusion Device:* Install bird netting from the bridge prior to start of nesting season (i.e. before February 15). If this technique is used, netting shall be in place from mid-February until the bridge is removed. If a nesting deterrent is used, the deterrent shall be monitored for integrity and effectiveness until the bridge is removed. • *Nest Removal.* Starting before the nesting season (i.e., prior to February 15), the County or its contractor shall visit the site daily and remove partially completed nests on the bridge using either hand tools or high pressure water. Disturbance or removal of active nests (i.e., nests containing eggs or young) shall not be conducted without the appropriate authorization(s) from the Service and/or the CDFW. If nests cannot be removed prior to the nesting season (i.e., before February 15), a qualified biologist shall determine if nests are inactive and can be removed before construction begins without disturbing nesting activity. If active nests are identified, construction in the vicinity of the bridge may need to be postponed until nests are determined by a qualified biologist to be inactive or the Service and/or CDFW authorizes the removal of active nests. An effective deterrent to bird nesting shall be installed on the bridge once the nests are removed.	Existing bridge	• Remove existing inactive bird nests • Install nest deterrent measures • If nests cannot be removed prior to the nesting season, a qualified biologist will determine the status of the nest and implement appropriate measures to discourage bird nesting	• Qualified biologist • The County • The Service and/or CDFW

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
Mitigation Measure BIO-8: Pre-Construction Surveys and Construction Monitoring for Western Yellow-Billed Cuckoo Preconstruction surveys for western yellow-billed cuckoo and construction monitoring shall be conducted by a qualified biologist (see Measure BIO-2) in all project areas within suitable habitat and a 500-foot buffer from suitable habitat. In the event that western yellow-billed cuckoo(s) are detected within the work area (the area of active equipment uses), all construction activities in the area shall halt and Caltrans and the Service and CDFW shall be notified by no later than noon of the next business day. The County and/or Caltrans shall initiate consultation with CDFW and the USFWS, which may include obtaining a California Endangered Species Act Incidental Take Permit and federal authorization if impacts to western yellow-billed cuckoo cannot be avoided. Project activities in the area may not proceed until the cuckoo(s) have left the work area. Where cuckoo(s) are detected within 500 feet of the construction area, project activities in the area may proceed with caution under the direction of the qualified biologist who is monitoring the activity of the western yellow-billed cuckoo in the area and has the ability to halt work. If impacts to western yellow-billed cuckoo cannot be avoided, the County and/or Caltrans shall initiate consultation with CDFW and the Service, which may include obtaining a California Endangered Species Act Incidental Take Permit and federal authorization.	All project areas within suitable habitat and a 500-foot buffer from suitable habitat	• Qualified biologist conducts pre-construction survey for western yellow-billed cuckoo	• Qualified biologist • Construction contractor
Mitigation Measure BIO-9: Riparian Mitigation and Monitoring Plan The County shall enhance and restore riparian habitat to mitigate for permanent and temporary impacts. The County shall prepare a Riparian Mitigation and Monitoring Plan that addresses mitigation and monitoring for riparian habitat that shall be impacted by the project. The Riparian Mitigation and Monitoring Plan will be provided to CDFW for review and approval prior to the beginning of construction and will also address mitigation requirements contained in the CDFW Streambed Alteration Agreement. The plan shall, at a minimum: • Identify the location of the mitigation site(s). The County's preference is for mitigation to occur on site or in the immediate project vicinity (along Salmon Creek). The County shall consider off-site mitigation only if mitigation along Salmon Creek is infeasible;	N/A	• The County submits a Riparian Mitigation and Monitoring Plan to CDFW for review and approval	• The County • CDFW

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
• Require the following mitigation ratios for temporary and permanent impacts. Impact acreage will be based on the project's final engineering design: – Temporary impacts to 0.185 acre of riparian habitat restored on-site at a 1:1 ratio (restoration area: impacted area) – Permanent impacts to 0.021 acre of riparian habitat mitigated for on-site at a 2:1 ratio (mitigation area: impacted area) or off-site at a ratio to be determined in coordination with CDFW as part of the Streambed Alteration Agreement • Include the following tree replacement ratios (number replaced: number removed): – Non-native trees greater than 4 inches diameter at breast height (DBH) replaced on-site with native riparian species at a 1:1 ratio – Native riparian trees greater than 4 inches DBH replaced on-site at a ratio of 3:1 – Native oak trees replaced on-site at a: – 4:1 ratio for oaks that measure 5 to 10 inches DBH – 6:1 ratio for oaks that measure 10 to 15 inches DBH – 10:1 ratio for oaks the measure greater than 15 inches DBH • A schematic depicting the mitigation area including initial site photographs; • The species to be seeded and planted and the ratio of seed mix and/or plantings for each species; • A work schedule, including names, titles and companies for all individuals who are involved in preparing the plan and conducting activities; • Specific success criteria; • A maintenance and monitoring program for 5 years, unless success criteria are met prior to 5 years, in which case maintenance and monitoring would cease; and • Contingency measures should the success criteria not be met.			
Mitigation Measure BIO-10: Protection of Badgers Prior to construction in badger denning habitat, which is characterized by herbaceous, shrub, and open stages of most habitats with dry, friable soils, a qualified wildlife biologist shall conduct a survey to identify any American badger	Badger denning habitat	• Qualified biologist conducts a survey for American badger den no less than 14 days	• Qualified biologist • Construction contractor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
burrows/dens. No less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities, a qualified biologist shall conduct a survey to determine if American badger den sites are present at the site. If dens are found, they will be monitored for badger activity. If the qualified biologist determines that dens may be active, the entrances of the dens will be blocked with soil, sticks, and debris for 3 to 5 days to discourage the use of these dens prior to project disturbance activities. The den entrances will be blocked to an incrementally greater degree over the 3- to 5-day period. After the qualified biologist determines that badgers have stopped using active dens, the dens will be hand-excavated with a shovel to prevent re-use during construction. No disturbance of active dens will take place when cubs may be present and dependent on parental care, as determined by a qualified biologist.		and no more than 30 days prior to the beginning of ground disturbance and/or construction activities	
Mitigation Measure BIO-11: Roosting Bat Protection Plan A qualified biologist shall conduct a pre-construction survey 14 days prior to tree removal and construction and demolition of the existing bridge. If any active bat roosts are observed within 50 feet of the construction area or on the existing bridge a Roosting Bat Protection Plan shall be prepared and implemented. If no active bat roosts are observed, no further measures would be required. The Roosting Bat Protection Plan will be prepared in accordance with guidance from the California Bat Mitigation Techniques Solutions, and Effectiveness (Johnston, Tatarian, & Pierson, 2004).	All project areas	• Qualified biologist conducts a pre-construction survey for roosting bat 14 days prior to tree removal and construction and demolition of the exiting bridge • Prepare a Roosting Bat Protection Plan if active bat roosts are observed within 50 feet of the construction area or on the existing bridge	• Qualified biologist • The County • Construction contractor
Mitigation Measure BIO-12: Special-Status Plants Pre-Construction Survey A qualified botanist shall conduct a pre-construction survey for rare plants within all areas of project disturbance prior to project start. The qualified botanist shall either mark the species for avoidance and Environmental Sensitive Area (ESA)	All project area	• Qualified botanist conducts a pre-construction survey	• Qualified botanist • The County

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
fencing shall be installed to protect the plant or if the plant cannot be avoided, the plant shall be transplanted under the direction of a qualified botanist. Transplanting would only occur if avoidance is not feasible and any transplanted special-status plants would be replanted within a suitable habitat area within the project area under the direction of a qualified botanist.		for rare plants prior to project starts • Qualified botanist marks the species for avoidance or install ESA fencing • Transplanting would only occur if avoidance is not feasible and would occur under the direction of a qualified botanist	
Mitigation Measure BIO-13: Tree Replacement and Monitoring Plan Prior to the start of construction, the County shall determine whether the trees identified for removal would fall under protection of the Tree Protection Ordinance. If any protected tree would be removed, the County shall adhere to the requirements of the Sonoma County Tree Protection Ordinance (Section 26-88-010(m)), including by implementing replacement plantings in accordance with the standards set forth therein. Protocols for the installation, monitoring, and successful establishment of replacement plantings shall be specified in a Tree Replacement and Monitoring Plan. The Tree Replacement and Monitoring Plan shall include protocols for replanting of trees removed prior to or during construction, and management and monitoring of the trees to ensure replanting success. Where it is infeasible to replant the total number of trees required on the project site due to size constraints or repeated failure to thrive, the County may replant a selected number of trees off-site or make in-lieu payment fees in accordance with the terms of the Ordinance.	N/A	• The County determines whether the trees identified for removal are protected trees • If protected tree would be removed, the County shall adhere to the Tree Protection Ordinance requirements and prepare a Tree Replacement and Monitoring Plan	• The County
Mitigation Measure CUL-1: Cultural Resources Sensitivity Training and Inadvertent Discovery A professional archeologist shall provide sensitivity training to supervisory staff (County staff, biological monitor, and construction foreman) prior to initiation of site	N/A	• Professional archeologist provides sensitivity training supervisory staff	• Qualified archeologist • Cultural resources specialist • The County

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
preparation and/or construction, to alert construction workers to the possibility of exposing significant historic and/or prehistoric archaeological resources within the project area. The training shall include a discussion of the types of prehistoric or historic objects that could be exposed and how to recognize them, the need to stop excavation at a discovery, and protection and notification. The archaeologist shall coordinate with a Tribal Cultural Monitor to appropriately describe tribal cultural resources within the project area and the values to local tribes. An "Alert Sheet" shall be posted in staging areas, such as in construction trailers, to alert personnel to the procedures and protocols to follow for the discovery of a potentially significant historic and/or prehistoric archaeological resource. In the event of an unanticipated discovery of archaeological and/or historical deposits during project implementation, the County shall ensure that construction crews shall stop all work within 100 feet of the discovery until a qualified archaeologist can assess the previously unrecorded discovery and provide recommendations. A qualified cultural resource specialist/archaeologist shall inspect the discovery and determine whether further investigation is required. If the discovery can be avoided and no further impacts shall occur, the resource shall be documented on California State Department of Parks and Recreation cultural resource record forms and no further effort shall be required. If work must commence in the sensitive area, it can only be performed using hand tools or powered hand tools, cannot include ground disturbance below the topsoil layer, and can only be accessed on foot. Alternatively, the cultural resource specialist/archaeologist shall evaluate the resource and determine whether it is: • Eligible for the CRHR (and a historical resource for purposes of CEQA), or • A unique archaeological resource as defined by CEQA. If the resource meets the criteria for either a historical resource or unique archaeological resource, work shall remain halted and the cultural resources specialist/archaeologist shall consult with the County staff regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA Guidelines Section 15064.5(b). Avoidance of the area, or avoidance of impacts on the resource, is the preferred method of mitigation for impacts on cultural resources and shall be required unless there are other equally effective methods. Other methods to be considered shall			• Biological monitor • Construction contractor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
include evaluation, collection, recordation, and analysis of any significant cultural materials in accordance with a Cultural Resources Management Plan prepared by the qualified cultural resource specialist/archaeologist. The methods and results of evaluation or data recovery work at an archaeological find shall be documented in a professional level technical report to be filed with California Historical Resources Information System. Work may commence upon completion of evaluation, collection, recordation, and analysis, as approved by the qualified archeologist.			
Mitigation Measure GEO-2: Paleontological Resources Sensitivity Training and Inadvertent Discovery A professional paleontologist shall provide sensitivity training to supervisory staff (County staff, biological monitor, and construction foreman) to alert construction workers to the possibility of exposing significant paleontological resources within the project area. The training shall be conducted to recognize fossil materials in the event that any are uncovered during construction. In the event that a paleontological resource is uncovered during project implementation, all ground-disturbing work within a 50-foot radius shall be halted. A qualified paleontologist shall inspect the discovery and determine whether further investigation is required. If the discovery can be avoided and no further impacts shall occur, no further effort shall be required. If the resource cannot be avoided and may be subject to further impact, a qualified paleontologist shall evaluate the resource and determine whether it is "unique" under CEQA, Appendix G, part V. If the resource is determined not to be unique, work may commence in the area. If the resource is determined to be a unique paleontological resource, work shall remain halted, and the paleontologist shall consult with County staff regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA. Preservation-in-place (i.e., avoidance) is the preferred method of mitigation for impacts to paleontological resources. If preservation-in-place is not feasible and avoidance is not possible, the fossils shall be recovered, prepared, identified, catalogued, and analyzed according to current professional standards under the direction of a qualified paleontologist. All recovered fossils shall be curated at an accredited and	N/A	• Professional paleontologist provides sensitive training to supervisory staff	• Qualified paleontologist • The County • Biological monitor • Construction contractor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
permanent scientific institution according to Society of Vertebrate Paleontology (SVP) standard guidelines. Work may commence upon completion of treatment.			
Mitigation Measure HAZ-1: Debris Collection and Containment Program Sonoma County shall ensure that a Debris Collection and Containment Program is developed and implemented during project construction. The Program shall include a Lead Compliance Plan and shall ensure that painted bridge materials are treated as a hazardous material and handled in accordance with applicable provisions of Caltrans Standard Special Provisions (2018 or most recent) for the removal of lead paint, Provision 14-11.13, Disturbance of Existing Paint Systems on Bridges. The Program shall also require provisions to protect worker safety and health in compliance with Title 8 California Code of Regulations, including § 1532.1., and provisions for the proper handling and disposal of debris in accordance with all applicable Federal State and local hazardous waste laws. The contractor shall be required to prepare and submit drawings to the County of the containment systems to be used. The containment system may include the following containment procedure or similar procedure that adequately prevents accidental release of lead paint into the environment: • Local containment shall be installed prior to removing the bridge for the purpose of containing all paint flakes. Containment shall consist of using tarps to enclose the sides and bottoms of the existing trusses within 10 feet of the support locations and bridge pick-up points (i.e., locations that are used to connect equipment for the purpose of lifting the bridge). • Where the existing paint is not flaking, the contractor shall have the option of applying a clear coat of paint instead of enclosing the trusses with tarps. • Following installation of containment tarps and/or clear coat of paint, the existing bridge shall be lifted in one piece from its supports at the abutments and interior pier. Further truss disassembly, removal, transport and disposal shall be subject to existing laws and regulations.	N/A	• The County develops a Debris Collection and Containment Program	• The County • Construction contractor
Mitigation Measure HAZ-3: Fire Prevention Procedures	N/A	• Provide fire hazards training to all workers	• The County

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
Sonoma County and their contractor shall implement the following fire prevention procedures to reduce the potential risk of fire ignitions during construction: • Prior to ground disturbing activities, all workers on the project site shall be trained regarding the proper handling and/or storage of materials posing a fire hazards, potential ignition sources (such as cigarettes or sparking equipment), and appropriate types and use of fire protection equipment. • Fire suppression equipment, including fire extinguishers, water, and shovels, shall be available on-site at all times. • All ignitions shall warrant a call to the fire department to ensure the ignition is fully extinguished. • Vehicles shall not be parked in vegetated areas. If vegetated areas must be used for parking, vegetation shall be mowed to a height of less than 4 inches to avoid contact with the underside of vehicles. • Smoking shall be allowed only inside fully-enclosed vehicles with closed windows. Cigarette butts shall be thoroughly extinguished, properly contained, and transported off-site for disposal. • Hot work (welding, grinding, cutting, or any other activity that produces flame, sparks, or embers) shall be restricted during red flag warnings or potentially dangerous fire conditions, as determined by the County and communicated to the contractor.			• Construction contractor
Mitigation Measure NOI-1: Noise Reduction Techniques Sonoma County and their contractor shall implement the following noise reduction measures to reduce construction noise at nearby receptors: • The contractor shall prepare a detailed construction plan identifying the schedule for major noise-generating construction activities and distribute this plan to adjacent noise sensitive receptors. • Noise generating construction activities shall be restricted to between hours of 7:00 am to 7:00 pm Monday through Friday, 9:00 am to 7:00 pm Saturday. The contractor shall request of the Engineer at least 48 hours in advance of the contractor's intent to work on Sundays or holidays. The contractor shall notify the County if work is necessary outside of these hours. The County shall require the	N/A	• Construction contractor prepares construction plan to identify schedule for major noise-generating activities and distribute plan to adjacent sensitive receptors • Provide advanced notification when construction activity	• The County • Construction contractor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
contractor to implement a construction noise monitoring program and, if feasible, provide additional mitigation as necessary (in the form of noise control blankets or other temporary noise barriers, etc.) for affected receptors. • Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment. • Unnecessary idling of internal combustion engines shall be strictly prohibited. • Locate stationary noise generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project area. Utilize "quiet" air compressors and other "quiet" equipment where such technology exists.		is required outside specified hours	
Mitigation Measure TRA-1: Construction Traffic Control Measures The contractor shall prepare and implement a Traffic Control Plan that includes the traffic safety measures listed below. The contractor shall submit the Traffic Control Plan to the County for review at least 14 days prior to construction. • Traffic safety guidelines compatible with Section 12, "Temporary Traffic Control," of the Caltrans Standard Specifications, and the California Manual on Uniform Traffic Control Devices (California MUTCD) shall be implemented during construction. Project plans and specifications shall require provision of adequate signage and other precautions for public safety during project construction. • Prior to temporary closures or lengthy delays, signs shall be placed at all entrances to the project site and on major intersecting roads (e.g., Bohemian Highway and Freestone Flat Road) to notify motorists and bicyclists that traffic shall be subject to delay. • Local emergency service providers (i.e., fire departments, police departments, ambulance, and paramedic services) shall be notified of the construction schedule and potential for delays prior to the start of construction. • Emergency service providers and parcels along Freestone Flat Road and Scott Robin Road shall be notified of any temporary closures at least 5 days in advance of the closures. The contractor shall provide proof of the notification to the Sonoma County construction staff.	N/A	• Construction contractor prepares Traffic Control Plan and submit the plan to the County at least 14 days prior to construction	• The County • Construction contractor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
• The contractor shall allow passage of emergency vehicles through the project site at all times. • The contractor shall maintain access to all driveways to parcels off the project site throughout project construction. The contractor shall determine the construction schedule for local roadway improvement projects along the truck routes to and from the project site, particularly any lane and road closures. The contractor shall time large haul and material delivery truck trips to avoid traveling along routes where conflicts could occur due to ongoing roadway improvements.			
Mitigation Measure TCR-1: Tribal Cultural Resources Inadvertent Discovery The training and Alert Sheet identified under Mitigation Measure CUL-1 shall also encompass tribal cultural resources. In the event that an archaeological resource is discovered, ground-disturbing work shall be halted within 100 feet of the find, and a qualified Tribal Cultural Monitor shall be brought to the site. The qualified Tribal Cultural Monitor shall evaluate the resource and determine whether it is of special importance to a California Native American Tribe. If the resource is determined to not be of importance to the tribe, work may commence in the area. If the resource meets the criteria for an important tribal resource, work shall remain halted within 100 feet of the find, and the qualified Tribal Cultural Monitor shall evaluate the resource and determine whether it is an important resource to the local Native American Tribe. If the resource is important to the tribe, work shall remain halted within 100 feet of the area of the find and the qualified Tribal Cultural Monitor shall consult with County staff regarding methods to ensure that no substantial adverse change would occur to the significance of the tribal cultural resource pursuant to PRC section 21084.3. Methods may include the following: • Preservation-in-place (i.e., avoidance) is the preferred method of mitigation for impacts on tribal cultural resources. • Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:	N/A	• Professional archeologist provides sensitivity training supervisory staff per Mitigation Measure CUL-1	• Qualified archeologist • Qualified Trial Cultural Monitor • The County • Biological monitor • Construction contractor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
• Protecting the cultural character and integrity of the resource • Protecting the traditional use of the resource • Protecting the confidentiality of the resource • Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places. • Protecting the resource. Work in the area may commence upon completion of treatment, as approved by the County.			

Table A-2 Mitigation Measures – During Construction

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
Mitigation Measure AIR-1: Dust and Engine Emissions Control Measures The County or their contractor shall implement the following dust and engine emissions control measures during construction: 1. Water or dust palliatives shall be applied to all exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) and other surfaces that could give rise to airborne dust as needed to control dust. 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered. 3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers or other effective method as necessary to control project-related dust on public roads. The use of dry power sweeping is prohibited. 4. All vehicle speeds on unpaved roads shall be limited to 15 mph. 5. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of	All project areas	• Exposed surfaces are watered • Haul trucks are adequately covered • Vehicle speeds limits are maintained • Idling times are minimized • All construction equipment is checked by a certified mechanic	• The County • Construction constructor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. 6. Construction equipment will be properly maintained by a certified mechanic.			
Mitigation Measure BIO-1: Worker Environmental Awareness Program (WEAP) A Service-approved biologist will conduct employee education training for employees working on earthmoving and/or construction activities. Personnel will be required to attend the presentation, which will describe the Federal and State statutes protecting threatened, endangered, and special-status species that may be encountered on site; minimization and conservation measures; legal protection of species; and other related issues. Specifically, the WEAP shall include a description of all species identified as having moderate potential to occur in Table 7 of this IS/MND, the areas on site where they may occur, and any mitigation required to reduce impacts on those species. All attendees will sign an attendance sheet along with their printed name, company or agency, email address, and telephone number. The original sign-in sheet will be sent to the Service within seven (7) calendar days of the completion of the training.	N/A	• Approved biologist provides education training to construction personnel • Construction personnel attends training • The County submits sign-in sheet to the Service	• Approved biologist • The County • Construction personnel • The Service
Mitigation Measure BIO-2: Qualified Biologist A biologist(s) approved by the United States Fish and Wildlife Service (Service) and CDFW will be on-site during ground disturbance activities (e.g., grading and vegetation removal) that may result in take of state or federally threatened and endangered species. The qualified biologist must have experience with identifying all federal and state-listed species, as well as special-status species, with potential to occur as determined in Table 7 of this IS/MND. The biologist shall have specific experience identifying western yellow-billed cuckoo and California red-legged frog during all distinct life stages and experience with implementing conservation and other avoidance and minimization measures for these species and interacting with contractors and construction workers to ensure these measures are enforced. The qualifications of the biologist(s) will be submitted to the Service for review and written approval at least thirty (30) calendar days prior to the date earthmoving is initiated at the project site.	Areas where ground disturbance and vegetation removal activities occur	• Approved biologist monitors ground disturbance and vegetation removal activities	• Approved biologist • The County • The Service

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
Mitigation Measure BIO-3: California Red-Legged Frog Avoidance, Pre-Construction Survey and Biological Monitoring The County and their contractor shall implement the following measures to reduce or avoid impacts to California red-legged frog: • **Pre-Construction Survey.** No more than twenty-four (24) hours prior to the date of initial ground disturbance, a pre-construction survey for the California red-legged frog will be conducted by a Service-approved biologist at the project site. The survey will consist of walking the project limits and within the project site to ascertain the possible presence of the species. The Service-approved biologist will investigate all potential areas that could be used by the California red-legged frog for feeding, breeding, sheltering, movement, and other essential behaviors. This includes an adequate examination of mammal burrows, such as California ground squirrels or gophers. If any adults, subadults, juveniles, tadpoles, or eggs are found, the Service-approved biologist will contact the Service to determine if moving any of the individuals is appropriate. In making this determination the Service will consider if an appropriate relocation site exists. If the Service approves moving animals, the County will ensure the Service-approved biologist is given sufficient time to move the animals from the work site before ground disturbance is initiated. Relocation would be completed in accordance with the procedures defined in this mitigation measure, below. Only Service-approved biologists will capture, handle, and monitor the California red-legged frog. • **Construction Timing.** To the extent practicable, initial ground-disturbing activities will be avoided between November 1 and March 31 because that is the time period when California red-legged frogs are most likely to be moving through upland areas. When ground-disturbing activities must take place between November 1 and March 31, Sonoma County will ensure that daily monitoring by the Service-approved biologist is completed for the California red-legged frog. To the maximum extent practicable, no construction activities will occur during rain events or within 24-hours following a rain event (with greater than 0.1 inch of rainfall). Prior to construction activities resuming after a rain event non-work period, a Service- approved biologist will inspect the action area and all equipment/materials for the presence of California red-legged frogs. Any California red-legged frog encountered will be allowed to move away from the	All project areas	• Initial ground-disturbing activities will be avoided between November 1 and March 31 • No construction activities will occur during rain events or within 24 hours following a rain event • Implement appropriate measures if California red-legged frogs are observed on site • Implement appropriate measures to prevent California red-legged frogs entrapment	• Approved biologist • The County • Construction contractor • The Service

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
project site of their own volition or moved only by the Service-approved biologist in accordance with the procedures for California red-legged frog relocation defined below. • **California Red-Legged Frog Relocation.** Each encounter with the California red-legged frog will be treated on a case-by-case basis in coordination with the Service, but the general procedure is as follows: (1) the animal will not be disturbed if it is not in danger; or (2) the animal will be moved to a secure location if it is in any danger. These procedures are further described below: d. When a California red-legged frog is encountered in the action area, all activities which have the potential to result in the harassment, injury, or death of the individual will be immediately halted. The Service-approved biologist will then assess the situation in order to select a course of action that will avoid or minimize adverse effects to the animal. To the maximum extent possible, contact with the frog will be avoided and the applicant will allow it to move out of the potentially hazardous situation to a secure location on its own volition. This procedure applies to situations where a California red-legged frog is encountered while it is moving to another location. It does not apply to animals that are uncovered or otherwise exposed or in areas where there is not sufficient adjacent habitat to support the species should the individual move away from the hazardous location. e. California red-legged frogs that are in danger will be relocated and released by the Service- approved biologist outside the construction area within the same riparian area or watershed. If relocation of the frog outside the fence is not feasible (i.e., there are too many individuals observed per day), the biologist will relocate the animals to a Service pre- approved location. Prior to the initial ground disturbance, Sonoma County will obtain approval of the relocation protocol from the Service in the event that a California red- legged frog is encountered and needs to be moved away from the project site. Under no circumstances will a California red-legged frog be released on a site unless the written permission of the landowner has been obtained by Sonoma County. The Service-approved biologist will limit the duration of the handling and captivity of the California red-legged frog to the minimum amount of time			

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
necessary to complete the task. If the animal must be held in capacity, it will be kept in a cool, dark, moist, aerated environment, such as a clean and disinfected bucket or plastic container with a damp sponge. The container used for holding or transporting the individual will not contain any standing water. f. Sonoma County will immediately notify the Service once the California red-legged frog and the site is secure. The contact for this situation is the Coast Bay Division Chief of the Endangered Species Program by email and at telephone (916) 414-6623. • **Avoid Entrapment** – Plastic monofilament netting (erosion control matting), loosely woven netting, or similar material in any form will not be used at the project site because California red-legged frogs can become entangled and trapped in them. Any such material found on site will be immediately removed by the Service-approved biologist, construction personnel, or the applicant. Materials utilizing fixed weaves (strands cannot move), polypropylene, polymer or other synthetic materials will not be used. – Loss of soil from run-off or erosion will be prevented with straw bales, straw wattles, or similar means provided they do not entangle, block escape or dispersal routes of California red-legged frog. – Trenches or pits one (1) foot or deeper that are going to be left unfilled for more than forty- eight (48) hours will be securely covered with boards or other material to prevent the California red-legged frog from falling into them. If this is not possible, Sonoma County and their contractor will ensure wooden ramps or other structures of suitable surface that provide adequate footing for the California red-legged frog are placed in the trench or pit to allow for their unaided escape. Auger holes or fence post holes that are greater than 0.10 inch in diameter will be immediately filled or securely covered so they do not become pitfall traps for the California red-legged frog. The Service-approved biologist will inspect the trenches, pits, or holes prior to their being filled to ensure there are no California red-legged frogs in them. The trench, pit, or hole also will be examined by the Service-approved biologist each workday morning at least one hour prior to initiation of work and in the late afternoon no more			

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
than one hour after work has ceased to ascertain whether any individuals have become trapped. If the escape ramps fail to allow the animal to escape, the Service-approved biologist will remove and transport it to a safe location, or contact the Service for guidance.			
Mitigation Measure BIO-5: Pre-Construction Survey and Biological Monitoring for Western Pond Turtle The County and their contractor shall implement the following measures to reduce or avoid impacts to western pond turtle: • A preconstruction survey for western pond turtle shall occur within 48 hours prior to the start of construction activities within the riparian and aquatic habitat in the BSA. • A qualified biologist will be present during grubbing and clearing activities in the riparian and aquatic habitat in the BSA to monitor for western pond turtle. • If a western pond turtle is observed in areas of active construction, construction will cease and a qualified biologist will be notified. Construction may resume when the biologist has either relocated the western pond turtle to nearby suitable habitat outside the limits of project construction, or, after thorough inspection, determined that the western pond turtle has moved away from the area of active construction.	Riparian and aquatic habitat in the BSA	• Qualified biologist monitors grubbing and clearing activities • Implement appropriate measures if western pond turtles are observed on site	• Qualified biologist • Construction contractor
Mitigation Measure BIO-6: Nesting Bird Season Avoidance, Pre-Construction Surveys, and Monitoring The County and their contractor shall implement the following measures to reduce or avoid impacts to nesting birds during construction: • **Avoid Tree Removal during Nesting Season.** Tree removal and trimming activities shall avoid the bird nesting season (February 15 through August 31). Trees that have been identified for removal shall be removed prior to the bird nesting season to avoid impacts to nesting birds. Trees shall be cut at ground level and removed from the site. The stump shall remain in place until after the end of the rainy season (April 15). Tree stumps within the roadway prism or in conflict with new bridge foundations may be completely removed during road and bridge construction.	All project areas	• Avoid tree removal and trimming during nesting season • Implement appropriate measures if active nests are observed on site	• Qualified biologist • The County • Construction contractor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
• **Activities During Nesting Season.** If construction commences during the nesting season, the following shall be implemented: – A preconstruction survey for nesting birds shall be conducted within 7 days prior to construction within 500 feet of work areas to ensure that no nest shall be disturbed during construction. – If active nests of migratory bird species (listed in the MBTA) are found within the project site, or in areas subject to disturbance from construction activities, an avoidance buffer to avoid nest disturbance shall be constructed. The buffer size shall be determined by a qualified biologist and shall be based on the nest location, topography, cover and species' tolerance to disturbance. – If an avoidance buffer is not achievable, a qualified biologist shall monitor the nest(s) to document that no take of the nest (nest failure) has occurred. Active nests shall not be taken or destroyed under the MBTA and, for raptors, under the CDFW Code. If it is determined that construction activity is resulting in nest disturbance, work shall cease immediately and the County shall consult with the qualified biologist and appropriate regulatory agencies. – If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further action is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by special-status birds or that are located outside the avoidance buffer for active nests may be removed. Nests initiated during construction (while significant disturbance from construction activities persist) may be presumed to be unaffected, and only a minimal buffer, determined by a qualified biologist, would be necessary.			
Mitigation Measure BIO-7: Discourage Bird Nesting on Bridge To discourage bird nesting on the existing bridge during construction, existing inactive bird nests on the Freestone Flat Road Bridge shall be removed prior to the onset of construction, between September 1 and February 14 (outside of the nesting season). Following removal of inactive nests, nest deterrent measures shall be installed on the existing bridge to prevent establishment of new nests. Techniques to prevent nest establishment include using exclusion devices (see below), removing and disposing of partially constructed and unoccupied nests of	Existing bridge	• Implement appropriate measures to discourage bird nesting	• Qualified biologist • The County • The Service and/or CDFW

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
migratory or nongame birds on a regular basis to prevent their occupation, or performing any combination of these techniques. • *Exclusion Device:* Install bird netting from the bridge prior to start of nesting season (i.e. before February 15). If this technique is used, netting shall be in place from mid-February until the bridge is removed. If a nesting deterrent is used, the deterrent shall be monitored for integrity and effectiveness until the bridge is removed. • *Nest Removal.* Starting before the nesting season (i.e., prior to February 15), the County or its contractor shall visit the site daily and remove partially completed nests on the bridge using either hand tools or high pressure water. Disturbance or removal of active nests (i.e., nests containing eggs or young) shall not be conducted without the appropriate authorization(s) from the Service and/or the CDFW. If nests cannot be removed prior to the nesting season (i.e., before February 15), a qualified biologist shall determine if nests are inactive and can be removed before construction begins without disturbing nesting activity. If active nests are identified, construction in the vicinity of the bridge may need to be postponed until nests are determined by a qualified biologist to be inactive or the Service and/or CDFW authorizes the removal of active nests. An effective deterrent to bird nesting shall be installed on the bridge once the nests are removed.			
Mitigation Measure BIO-8: Pre-Construction Surveys and Construction Monitoring for Western Yellow-Billed Cuckoo Preconstruction surveys for western yellow-billed cuckoo and construction monitoring shall be conducted by a qualified biologist (see Measure BIO-2) in all project areas within suitable habitat and a 500-foot buffer from suitable habitat. In the event that western yellow-billed cuckoo(s) are detected within the work area (the area of active equipment uses), all construction activities in the area shall halt and Caltrans and the Service and CDFW shall be notified by no later than noon of the next business day. The County and/or Caltrans shall initiate consultation with CDFW and the USFWS, which may include obtaining a California Endangered Species Act Incidental Take Permit and federal authorization if impacts to western yellow-billed cuckoo cannot be avoided. Project activities in the area may not	All project areas within suitable habitat and a 500-foot buffer from suitable habitat	• Qualified biologist monitors construction activities • Implement appropriate measures if western yellow-billed cuckoos are observed on site	• Qualified biologist • Construction contractor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
proceed until the cuckoo(s) have left the work area. Where cuckoo(s) are detected within 500 feet of the construction area, project activities in the area may proceed with caution under the direction of the qualified biologist who is monitoring the activity of the western yellow-billed cuckoo in the area and has the ability to halt work. If impacts to western yellow-billed cuckoo cannot be avoided, the County and/or Caltrans shall initiate consultation with CDFW and the Service, which may include obtaining a California Endangered Species Act Incidental Take Permit and federal authorization.			
Mitigation Measure BIO-10: Protection of Badgers Prior to construction in badger denning habitat, which is characterized by herbaceous, shrub, and open stages of most habitats with dry, friable soils, a qualified wildlife biologist shall conduct a survey to identify any American badger burrows/dens. No less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities, a qualified biologist shall conduct a survey to determine if American badger den sites are present at the site. If dens are found, they will be monitored for badger activity. If the qualified biologist determines that dens may be active, the entrances of the dens will be blocked with soil, sticks, and debris for 3 to 5 days to discourage the use of these dens prior to project disturbance activities. The den entrances will be blocked to an incrementally greater degree over the 3- to 5-day period. After the qualified biologist determines that badgers have stopped using active dens, the dens will be hand-excavated with a shovel to prevent re-use during construction. No disturbance of active dens will take place when cubs may be present and dependent on parental care, as determined by a qualified biologist.	Badger denning habitat	• Implement appropriate measures if active dens are observed on site	• Qualified biologist • Construction contractor
Mitigation Measure BIO-11: Roosting Bat Protection Plan A qualified biologist shall conduct a pre-construction survey 14 days prior to tree removal and construction and demolition of the existing bridge. If any active bat roosts are observed within 50 feet of the construction area or on the existing bridge a Roosting Bat Protection Plan shall be prepared and implemented. If no active bat roosts are observed, no further measures would be required. The Roosting Bat Protection Plan will be prepared in accordance with guidance from the California	All project areas	• Implement a Roosting Bat Protection Plan if active bat roosts are observed within 50 feet of the construction area or on the existing bridge	• Qualified biologist • The County • Construction contractor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
Bat Mitigation Techniques Solutions, and Effectiveness (Johnston, Tatarian, & Pierson, 2004).			
Mitigation Measure BIO-12: Special-Status Plants Pre-Construction Survey A qualified botanist shall conduct a pre-construction survey for rare plants within all areas of project disturbance prior to project start. The qualified botanist shall either mark the species for avoidance and Environmental Sensitive Area (ESA) fencing shall be installed to protect the plant or if the plant cannot be avoided, the plant shall be transplanted under the direction of a qualified botanist. Transplanting would only occur if avoidance is not feasible and any transplanted special-status plants would be replanted within a suitable habitat area within the project area under the direction of a qualified botanist.	All project area	• Transplanting would only occur if avoidance is not feasible and would occur under the direction of a qualified botanist	• Qualified botanist • The County
Mitigation Measure BIO-13: Tree Replacement and Monitoring Plan Prior to the start of construction, the County shall determine whether the trees identified for removal would fall under protection of the Tree Protection Ordinance. If any protected tree would be removed, the County shall adhere to the requirements of the Sonoma County Tree Protection Ordinance (Section 26-88-010(m)), including by implementing replacement plantings in accordance with the standards set forth therein. Protocols for the installation, monitoring, and successful establishment of replacement plantings shall be specified in a Tree Replacement and Monitoring Plan. The Tree Replacement and Monitoring Plan shall include protocols for replanting of trees removed prior to or during construction, and management and monitoring of the trees to ensure replanting success. Where it is infeasible to replant the total number of trees required on the project site due to size constraints or repeated failure to thrive, the County may replant a selected number of trees off-site or make in-lieu payment fees in accordance with the terms of the Ordinance.	N/A	• The County replants trees off-site or make in-lieu payment fees if replacing on site is infeasible	• The County
Mitigation Measure CUL-1: Cultural Resources Sensitivity Training and Inadvertent Discovery A professional archeologist shall provide sensitivity training to supervisory staff (County staff, biological monitor, and construction foreman) prior to initiation of site preparation and/or construction, to alert construction workers to the possibility of	All project areas where ground disturbance occurs	• Professional archeologist provides sensitivity training supervisory staff	• Qualified archeologist • Cultural resources specialist • The County • Biological monitor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
exposing significant historic and/or prehistoric archaeological resources within the project area. The training shall include a discussion of the types of prehistoric or historic objects that could be exposed and how to recognize them, the need to stop excavation at a discovery, and protection and notification. The archaeologist shall coordinate with a Tribal Cultural Monitor to appropriately describe tribal cultural resources within the project area and the values to local tribes. An "Alert Sheet" shall be posted in staging areas, such as in construction trailers, to alert personnel to the procedures and protocols to follow for the discovery of a potentially significant historic and/or prehistoric archaeological resource. In the event of an unanticipated discovery of archaeological and/or historical deposits during project implementation, the County shall ensure that construction crews shall stop all work within 100 feet of the discovery until a qualified archaeologist can assess the previously unrecorded discovery and provide recommendations. A qualified cultural resource specialist/archaeologist shall inspect the discovery and determine whether further investigation is required. If the discovery can be avoided and no further impacts shall occur, the resource shall be documented on California State Department of Parks and Recreation cultural resource record forms and no further effort shall be required. If work must commence in the sensitive area, it can only be performed using hand tools or powered hand tools, cannot include ground disturbance below the topsoil layer, and can only be accessed on foot. Alternatively, the cultural resource specialist/archaeologist shall evaluate the resource and determine whether it is: • Eligible for the CRHR (and a historical resource for purposes of CEQA), or • A unique archaeological resource as defined by CEQA. If the resource meets the criteria for either a historical resource or unique archaeological resource, work shall remain halted and the cultural resources specialist/archaeologist shall consult with the County staff regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA Guidelines Section 15064.5(b). Avoidance of the area, or avoidance of impacts on the resource, is the preferred method of mitigation for impacts on cultural resources and shall be required unless there are other equally effective methods. Other methods to be considered shall include evaluation, collection, recordation, and analysis of any significant cultural		• Construction crews stop work within 100 feet of discovery • Qualified archaeologist assesses the discovery and provides recommendations • Implement appropriate measures to document and/or mitigate impacts on cultural resources	• Construction contractor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
materials in accordance with a Cultural Resources Management Plan prepared by the qualified cultural resource specialist/archaeologist. The methods and results of evaluation or data recovery work at an archaeological find shall be documented in a professional level technical report to be filed with California Historical Resources Information System. Work may commence upon completion of evaluation, collection, recordation, and analysis, as approved by the qualified archeologist.			
Mitigation Measure CUL-2: Human Remains In the event of an unanticipated discovery of human remains during project implementation, the County shall ensure that construction crews stop all work within 100 feet of the discovery. The County shall treat any human remains and associated or unassociated funerary objects discovered during soil-disturbing activities according to applicable State laws. Such treatment includes work stoppage and immediate notification of the Sonoma County Coroner, requisition of a qualified archaeologist, and in the event that the Coroner's determination that the human remains are Native American, notification of the Native American Heritage Commission (NAHC), according to the requirements in Public Resources Code (PRC) Section 5097.98. The NAHC would appoint a Most Likely Descendant (MLD). A qualified archaeologist, the County, and the MLD shall make all reasonable efforts to develop an agreement for the treatment, with appropriate dignity, of any human remains and associated or unassociated funerary objects (CEQA Guidelines Section 15064.5[d]). The agreement would take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, and final disposition of the human remains and associated or unassociated funerary objects. The PRC allows 48 hours to reach agreement on these matters. Work may recommence in the area of discovery following treatment of remains and any associated funerary objects.	All project areas where ground disturbance occurs	• Construction crews stop work within 100 feet of discovery • Implements procedures for discovery of human remains per state law	• The County • Construction contractor • County Coroner
Mitigation Measure GEO-1: Fill Material Testing and Standards The fill material recommendations in the final geotechnical evaluation conducted for the project foundations shall be implemented. Fill material recommendations include but are not limited to the following:	All project areas where soil excavation occurs	• Implement fill material recommendations in the final geotechnical evaluation	• The County • Construction contractor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
• Soils excavated on the project site shall be tested prior to use as fill • Fill soils used shall have a low expansion potential (expansion index of equal to or greater than 50; sand equivalent of equal to or less than 20), 100 percent passing 3-inch sieve, as approved by a soils engineer			
Mitigation Measure GEO-2: Paleontological Resources Sensitivity Training and Inadvertent Discovery A professional paleontologist shall provide sensitivity training to supervisory staff (County staff, biological monitor, and construction foreman) to alert construction workers to the possibility of exposing significant paleontological resources within the project area. The training shall be conducted to recognize fossil materials in the event that any are uncovered during construction. In the event that a paleontological resource is uncovered during project implementation, all ground-disturbing work within a 50-foot radius shall be halted. A qualified paleontologist shall inspect the discovery and determine whether further investigation is required. If the discovery can be avoided and no further impacts shall occur, no further effort shall be required. If the resource cannot be avoided and may be subject to further impact, a qualified paleontologist shall evaluate the resource and determine whether it is "unique" under CEQA, Appendix G, part V. If the resource is determined not to be unique, work may commence in the area. If the resource is determined to be a unique paleontological resource, work shall remain halted, and the paleontologist shall consult with County staff regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA. Preservation-in-place (i.e., avoidance) is the preferred method of mitigation for impacts to paleontological resources. If preservation-in-place is not feasible and avoidance is not possible, the fossils shall be recovered, prepared, identified, catalogued, and analyzed according to current professional standards under the direction of a qualified paleontologist. All recovered fossils shall be curated at an accredited and permanent scientific institution according to Society of Vertebrate Paleontology (SVP) standard guidelines. Work may commence upon completion of treatment.	All project areas where ground disturbance occurs	• Professional paleontologist provides sensitive training to supervisory staff • Construction crews stop ground-disturbing work within 50 feet of discovery • Qualified paleontologist inspects the discovery and provides recommendations • Implement appropriate measures for discovery of paleontological resources	• Qualified paleontologist • The County • Biological monitor • Construction contractor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
Mitigation Measure HAZ-1: Debris Collection and Containment Program Sonoma County shall ensure that a Debris Collection and Containment Program is developed and implemented during project construction. The Program shall include a Lead Compliance Plan and shall ensure that painted bridge materials are treated as a hazardous material and handled in accordance with applicable provisions of Caltrans Standard Special Provisions (2018 or most recent) for the removal of lead paint, Provision 14-11.13, Disturbance of Existing Paint Systems on Bridges. The Program shall also require provisions to protect worker safety and health in compliance with Title 8 California Code of Regulations, including § 1532.1., and provisions for the proper handling and disposal of debris in accordance with all applicable Federal State and local hazardous waste laws. The contractor shall be required to prepare and submit drawings to the County of the containment systems to be used. The containment system may include the following containment procedure or similar procedure that adequately prevents accidental release of lead paint into the environment: • Local containment shall be installed prior to removing the bridge for the purpose of containing all paint flakes. Containment shall consist of using tarps to enclose the sides and bottoms of the existing trusses within 10 feet of the support locations and bridge pick-up points (i.e., locations that are used to connect equipment for the purpose of lifting the bridge). • Where the existing paint is not flaking, the contractor shall have the option of applying a clear coat of paint instead of enclosing the trusses with tarps. • Following installation of containment tarps and/or clear coat of paint, the existing bridge shall be lifted in one piece from its supports at the abutments and interior pier. Further truss disassembly, removal, transport and disposal shall be subject to existing laws and regulations.	All project areas	• Implement the Debris Collection and Containment Program	• The County • Construction contractor
Mitigation Measure HAZ-2: Contaminated Soil Disposal If the County is responsible for removing and/or relocating existing utility poles during project construction, all soil that is excavated during the removal of existing utility poles shall be treated as hazardous materials and shall be transported and	Existing utility poles	• Treat excavated soil from existing utility poles as hazardous materials, transport and dispose soil in	• The County • Construction contractor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
disposed of in compliance with federal, state, and local regulations. Excavated holes shall be backfilled with certified clean fill material.		compliance with federal, state, and local regulations • Backfill excavated holes with certified clean fill material	
Mitigation Measure HAZ-3: Fire Prevention Procedures Sonoma County and their contractor shall implement the following fire prevention procedures to reduce the potential risk of fire ignitions during construction: • Prior to ground disturbing activities, all workers on the project site shall be trained regarding the proper handling and/or storage of materials posing a fire hazards, potential ignition sources (such as cigarettes or sparking equipment), and appropriate types and use of fire protection equipment. • Fire suppression equipment, including fire extinguishers, water, and shovels, shall be available on-site at all times. • All ignitions shall warrant a call to the fire department to ensure the ignition is fully extinguished. • Vehicles shall not be parked in vegetated areas. If vegetated areas must be used for parking, vegetation shall be mowed to a height of less than 4 inches to avoid contact with the underside of vehicles. • Smoking shall be allowed only inside fully-enclosed vehicles with closed windows. Cigarette butts shall be thoroughly extinguished, properly contained, and transported off-site for disposal. • Hot work (welding, grinding, cutting, or any other activity that produces flame, sparks, or embers) shall be restricted during red flag warnings or potentially dangerous fire conditions, as determined by the County and communicated to the contractor.	All project areas	• Provide fire hazards training to all workers • Provide fire suppression equipment on-stie at all time • Call fire department if ignition occurs • Limit parking in vegetated areas • Smoking only inside fully-enclosed vehicles • Restrict hot work during red flag warnings	• The County • Construction contractor
Mitigation Measure NOI-1: Noise Reduction Techniques Sonoma County and their contractor shall implement the following noise reduction measures to reduce construction noise at nearby receptors:	All project areas	• Provide advanced notification when construction activity	• The County • Construction contractor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
• The contractor shall prepare a detailed construction plan identifying the schedule for major noise-generating construction activities and distribute this plan to adjacent noise sensitive receptors. • Noise generating construction activities shall be restricted to between hours of 7:00 am to 7:00 pm Monday through Friday, 9:00 am to 7:00 pm Saturday. The contractor shall request of the Engineer at least 48 hours in advance of the contractor's intent to work on Sundays or holidays. The contractor shall notify the County if work is necessary outside of these hours. The County shall require the contractor to implement a construction noise monitoring program and, if feasible, provide additional mitigation as necessary (in the form of noise control blankets or other temporary noise barriers, etc.) for affected receptors. • Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment. • Unnecessary idling of internal combustion engines shall be strictly prohibited. • Locate stationary noise generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project area. Utilize "quiet" air compressors and other "quiet" equipment where such technology exists.		is required outside specified hours • Implement construction equipment practices to reduce noise • Implement noise-reducing construction activity practices	
Mitigation Measure TRA-1: Construction Traffic Control Measures The contractor shall prepare and implement a Traffic Control Plan that includes the traffic safety measures listed below. The contractor shall submit the Traffic Control Plan to the County for review at least 14 days prior to construction. • Traffic safety guidelines compatible with Section 12, "Temporary Traffic Control," of the Caltrans Standard Specifications, and the California Manual on Uniform Traffic Control Devices (California MUTCD) shall be implemented during construction. Project plans and specifications shall require provision of adequate signage and other precautions for public safety during project construction. • Prior to temporary closures or lengthy delays, signs shall be placed at all entrances to the project site and on major intersecting roads (e.g., Bohemian	All project areas	• Implement the Traffic Control Plan	• The County • Construction contractor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
Highway and Freestone Flat Road) to notify motorists and bicyclists that traffic shall be subject to delay. • Local emergency service providers (i.e., fire departments, police departments, ambulance, and paramedic services) shall be notified of the construction schedule and potential for delays prior to the start of construction. • Emergency service providers and parcels along Freestone Flat Road and Scott Robin Road shall be notified of any temporary closures at least 5 days in advance of the closures. The contractor shall provide proof of the notification to the Sonoma County construction staff. • The contractor shall allow passage of emergency vehicles through the project site at all times. • The contractor shall maintain access to all driveways to parcels off the project site throughout project construction. The contractor shall determine the construction schedule for local roadway improvement projects along the truck routes to and from the project site, particularly any lane and road closures. The contractor shall time large haul and material delivery truck trips to avoid traveling along routes where conflicts could occur due to ongoing roadway improvements.			
Mitigation Measure TCR-1: Tribal Cultural Resources Inadvertent Discovery The training and Alert Sheet identified under Mitigation Measure CUL-1 shall also encompass tribal cultural resources. In the event that an archaeological resource is discovered, ground-disturbing work shall be halted within 100 feet of the find, and a qualified Tribal Cultural Monitor shall be brought to the site. The qualified Tribal Cultural Monitor shall evaluate the resource and determine whether it is of special importance to a California Native American Tribe. If the resource is determined to not be of importance to the tribe, work may commence in the area. If the resource meets the criteria for an important tribal resource, work shall remain halted within 100 feet of the find, and the qualified Tribal Cultural Monitor shall evaluate the resource and determine whether it is an important resource to the local Native American Tribe. If the resource is important to the tribe, work shall	All project areas where ground disturbance occurs	• Professional archeologist provides sensitivity training supervisory staff per Mitigation Measure CUL-1 • Construction crews stop ground-disturbing work within 100 feet of discovery • Qualified Tribal Cultural Monitor evaluates the	• Qualified paleontologist/Cultural specialist • Qualified Trial Cultural Monitor • The County • Biological monitor • Construction contractor

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
remain halted within 100 feet of the area of the find and the qualified Tribal Cultural Monitor shall consult with County staff regarding methods to ensure that no substantial adverse change would occur to the significance of the tribal cultural resource pursuant to PRC section 21084.3. Methods may include the following: • Preservation-in-place (i.e., avoidance) is the preferred method of mitigation for impacts on tribal cultural resources. • Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following: • Protecting the cultural character and integrity of the resource • Protecting the traditional use of the resource • Protecting the confidentiality of the resource • Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places. • Protecting the resource. Work in the area may commence upon completion of treatment, as approved by the County.		discovered resource and provides recommendations • Implement appropriate measures to document and/or mitigate impacts on tribal cultural resources	

Table A-3 Mitigation Measures – After Construction

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
Mitigation Measure BIO-9: Riparian Mitigation and Monitoring Plan The County shall enhance and restore riparian habitat to mitigate for permanent and temporary impacts. The County shall prepare a Riparian Mitigation and Monitoring Plan that addresses mitigation and monitoring for riparian habitat that shall be impacted by the project. The Riparian Mitigation and Monitoring Plan will be provided to CDFW for review and approval prior to the beginning of construction and will also address mitigation requirements contained in the CDFW Streambed Alteration Agreement. The plan shall, at a minimum:	N/A	• Monitor the mitigation site for 5 years unless success criteria are met prior to 5 years	• The County • CDFW

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
• Identify the location of the mitigation site(s). The County's preference is for mitigation to occur on site or in the immediate project vicinity (along Salmon Creek). The County shall consider off-site mitigation only if mitigation along Salmon Creek is infeasible; • Require the following mitigation ratios for temporary and permanent impacts. Impact acreage will be based on the project's final engineering design: – Temporary impacts to 0.185 acre of riparian habitat restored on-site at a 1:1 ratio (restoration area: impacted area) – Permanent impacts to 0.021 acre of riparian habitat mitigated for on-site at a 2:1 ratio (mitigation area: impacted area) or off-site at a ratio to be determined in coordination with CDFW as part of the Streambed Alteration Agreement • Include the following tree replacement ratios (number replaced: number removed): – Non-native trees greater than 4 inches diameter at breast height (DBH) replaced on-site with native riparian species at a 1:1 ratio – Native riparian trees greater than 4 inches DBH replaced on-site at a ratio of 3:1 – Native oak trees replaced on-site at a: – 4:1 ratio for oaks that measure 5 to 10 inches DBH – 6:1 ratio for oaks that measure 10 to 15 inches DBH – 10:1 ratio for oaks the measure greater than 15 inches DBH • A schematic depicting the mitigation area including initial site photographs; • The species to be seeded and planted and the ratio of seed mix and/or plantings for each species; • A work schedule, including names, titles and companies for all individuals who are involved in preparing the plan and conducting activities; • Specific success criteria; • A maintenance and monitoring program for 5 years, unless success criteria are met prior to 5 years, in which case maintenance and monitoring would cease; and • Contingency measures should the success criteria not be met.			

Mitigation Measures	Applicable Locations	Monitoring/Reporting Action	Responsible and Involved Parties
Mitigation Measure BIO-13: Tree Replacement and Monitoring Plan Prior to the start of construction, the County shall determine whether the trees identified for removal would fall under protection of the Tree Protection Ordinance. If any protected tree would be removed, the County shall adhere to the requirements of the Sonoma County Tree Protection Ordinance (Section 26-88-010(m)), including by implementing replacement plantings in accordance with the standards set forth therein. Protocols for the installation, monitoring, and successful establishment of replacement plantings shall be specified in a Tree Replacement and Monitoring Plan. The Tree Replacement and Monitoring Plan shall include protocols for replanting of trees removed prior to or during construction, and management and monitoring of the trees to ensure replanting success. Where it is infeasible to replant the total number of trees required on the project site due to size constraints or repeated failure to thrive, the County may replant a selected number of trees off-site or make in-lieu payment fees in accordance with the terms of the Ordinance.	N/A	• The County replants trees off-site or make in-lieu payment fees if replacing on site is infeasible	• The County

APPENDIX B – BIOLOGICAL SUPPORTING INFORMATION

SNAME	CNAME	TAXONGROUP	ACCURACY	PRESENCE	OCCTYPE	OCCRANK	FEDLIST	CALLIST	GRANK	SRANK	RPLANT RANK	CDFWSTATUS	OTHRSTATUS	LOCATION	LOCDETAILS	ECOLOGICAL	THREAT	GENERAL
Rana draytonii	California red-legged frog	Amphibians	nonspecific area	Presumed Extant	Natural/Native occurrence	Good	Threatened	None	G2G3	S2S3		SSC	IUCN_VU			HABITAT CONSISTS OF CREEK BANKS LINED BY FORBS AND GRASSES; SITE IS LOCATED ADJACENT TO GRAZED PASTURE.	POSSIBLY THREATENED BY CATTLE GRAZING.	
Chorizanthe cuspidata var. villosa	woolly-headed spineflower	Dicots	1/10 mile	Presumed Extant	Natural/Native occurrence	Good	None	None	G2T2	S2	1B.2					DUNES, PARTIALLY STABILIZED BY AMMOPHILA ARENARIA, LUPINUS ARBOREUS VAR. ARBOREUS, AND BACCHARIS PILULARIS. CHORIZANTHE OCCURS IN OPENINGS WITH GILIA MILLEFOLIATA, ERICAMERIA, CARDIONEMA, AND CAMISSONIA CHERIANTHIFOLIA.	AMMOPHILA INVASION. RESIDENTIAL DEVELOPMENT.	
Gilia millefoliata	dark-eyed gilia	Dicots	1/10 mile	Presumed Extant	Natural/Native occurrence	Fair	None	None	G2	S2	1B.2		BLM_S			DUNES, PARTIALLY STABILIZED. AMMOPHILA ARENARIA AND LUPINUS ARBOREUS VAR. ARBOREUS ARE DOMINANT PLANT SPECIES. GILIA MILLEFOLIATA, CHORIZANTHE CUSPIDATA VAR. VILLOSA, ERICAMERIA ERICOIDES, AND CARDIONEMA RAMOSISSIMUM PRESENT IN OPENINGS.	AMMOPHILA INVASION. RESIDENTIAL DEVELOPMENT.	
Lilium pardalinum ssp. pitkinense	Pitkin Marsh lily	Monocots	80 meters	Presumed Extant	Natural/Native occurrence	Good	Endangered	Endangered	G5T1	S1	1B.1		SB_BerrySB; SB_RSABG; SB_USDA			IN AZALEA THICKETS, UNDER OAKS, AND IN OPEN, DAMP GROUND NEAR THE CREEK. ASSOCIATED WITH QUERCUS LOBATA, RHODODENDRON OCCIDENTALE, RUBUS PROCERUS, R. URSINUS, TRITELEIA PEDUNCULARIS, STACHYS CHAMISSONIS, TOXICODENDRON, AND SEVERAL GRASSES.	COLLECTING, NON-NATIVES, SURFACE WATER DIVERSION, FERAL PIGS, RUNOFF. PAST THREATS: CATTLE GRAZING & TRAMPLING.	
Rana draytonii	California red-legged frog	Amphibians	1 mile	Presumed Extant	Natural/Native occurrence	Good	Threatened	None	G2G3	S2S3		SSC	IUCN_VU			HABITAT CONSISTS OF A SHALLOW BLUE-LINE CREEK, TRIBUTARY TO ESTERO AMERICANO, WITH BANKS LINED BY JUNCUS, GRASSES, AND MISCELLANEOUS ANNUALS; SITE IS LOCATED ADJACENT TO GRAZED PASTURE.	POSSIBLY THREATENED BY CATTLE GRAZING.	
Rana draytonii	California red-legged frog	Amphibians	80 meters	Presumed Extant	Natural/Native occurrence	Good	Threatened	None	G2G3	S2S3		SSC	IUCN_VU			HABITAT CONSISTS OF A SHALLOW POOL WITH MUD BANKS FOR BASKING AND EMERGENT VEGETATION FOR BREEDING. SITE IS VEGETATED BY RIPARIAN / WETLAND PLANTS AND POOL MARGINS LINED WITH JUNCUS. SURROUNDING LAND IS PASTURE.	POTENTIAL THREAT FROM GRAZING CATTLE AND SEDIMENTATION.	
Trifolium amoenum	two-fork clover	Dicots	80 meters	Presumed Extant	Natural/Native occurrence	Good	Endangered	None	G1	S1	1B.1		SB_RSABG; SB_USDA			COASTAL BLUFF GRASSLAND WITH ERIGERON GLAUCUS, ARMERIA MARITIMA, HORDEUM BRACHYANTHERUM, LOLIUM MULTIFLORUM, DANTHONIA CALIFORNICA, AND BROMUS CARINATUS.	EROSION, AND POSSIBLY DEVELOPMENT ARE THREATS.	
Lilium pardalinum ssp. pitkinense	Pitkin Marsh lily	Monocots	specific area	Presumed Extant	Natural/Native occurrence	Good	Endangered	Endangered	G5T1	S1	1B.1		SB_BerrySB; SB_RSABG; SB_USDA			GRASSLAND UNDER OAKS & IN MARSH AT EDGE OF SHRUBS. ASSOCIATED WITH CORNUS STOLONIFERA, RHODODENDRON, RUBUS, GENTIANA SCEPTRUM, TOFIELDIA OCCIDENTALIS, HELENIUM BIGLOVII, PRUNELLA VULGARIS, MENTHA PULEGIUM, SISYRINCHIUM, JUNCUS, & CAREX.	PREVIOUSLY OVER-COLLECTED AND NEAR EXTIRPATION AT THIS SITE. AREA BEING ENCROACHED UPON BY CORNUS, RUBUS, AND WILLOW.	
Lilium pardalinum ssp. pitkinense	Pitkin Marsh lily	Monocots	specific area	Presumed Extant	Natural/Native occurrence	Unknown	Endangered	Endangered	G5T1	S1	1B.1		SB_BerrySB; SB_RSABG; SB_USDA				GRAZING, INTRODUCED SPECIES ARE THREATS.	
Erigeron greenei	Greene's narrow-leaved daisy	Dicots	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G3	S3	1B.2			2 MILES EAST OF OCCIDENTAL.	MAPPED AS BEST GUESS BY CNDDB AROUND 2 ROAD MILES EAST OF OCCIDENTAL ALONG MAIN ROADS HEADING IN THIS DIRECTION (GRATON RD AND OCCIDENTAL RD). BASED ON COLLECTIONS FROM "BETWEEN OCCIDENTAL AND GRATON" AND "2 MI E OF OCCIDENTAL."	SERPENTINE.		BASED ON 1936 HOWELL COLLECTION AND 1946 MASON COLLECTION. DS SPECIMEN FOR MASON COLLECTION ANNOTATED TO E. REDUCTUS VAR. ANGUSTATUS BY NESOM IN 1992, THOUGH UC RECORD AND CITATION IN 1992 NESOM PAPER GIVE E. ANGUSTATUS (E. GREENEI).

Agelaius tricolor	tricolored blackbird	Birds	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	Threatened	G2G3	S1S2		SSC	BLM_S; IUCN_EN; NABCI_RWL; USFWS_BCC	SEBASTOPOL, VICINITY OF HWY 12 & HWY 116 INTERSECTION.	LOCATION DESCRIBED ONLY AS "SEBASTOPOL." MAPPED GENERALLY TO SEBASTOPOL. FURTHER RESEARCH NEEDED TO DETERMINE STATUS OF COLONIES IN THE AREA. COLONY DATA STORED IN THE UC DAVIS TRICOLORED BLACKBIRD PORTAL; SITE NAME WAS "SEBASTOPOL."	NO HABITAT INFORMATION PROVIDED.	A BREEDING COLONY OF ABOUT 500-700 BIRDS OBSERVED IN LATE APR OF 1976. UNKNOWN IF COLONY FLEDGED YOUNG.
Rana boylii	foothill yellow-legged frog	Amphibians	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	Candidate Threatened	G3	S3		SSC	BLM_S; IUCN_NT; USFS_S	VICINITY OF CAMP MEEKER AND OCCIDENTAL, WEST OF SEBASTOPOL.			COLLECTED IN 1905, 1911, AND 1967.
Bombus caliginosus	obscure bumble bee	Insects	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G4?	S1S2			IUCN_VU	TOWN OF OCCIDENTAL.	EXACT LOCATION UNKNOWN. MAPPED BY CNDDB IN THE GENERAL VICINITY OF OCCIDENTAL.		COLLECTED IN THIS VICINITY ON 3 JUN 1969.
Trifolium hydrophilum	saline clover	Dicots	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G2	S2	1B.2			NEAR OCCIDENTAL.	EXACT LOCATION UNKNOWN. MAPPED BY CNDDB IN GENERAL VICINITY OF OCCIDENTAL.		PLANTS NOT FOUND IN 1995. ONLY SOURCE OF INFORMATION IS AN UNDATED CAS SPECIMEN CITATION BY R. MORGAN. NEEDS FIELDWORK.
Alopecurus aequalis var. sonomensis	Sonoma alopecurus	Monocots	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	Endangered	None	G5T1	S1	1B.1		SB_RSABG	BLOOMFIELD, SONOMA COUNTY.	EXACT LOCATION UNKNOWN. MAPPED BY CNDDB IN THE GENERAL VICINITY OF BLOOMFIELD.		ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1880 COLLECTION BY CONGDON. NEEDS FIELDWORK.
Ceanothus foliosus var. vineatus	Vine Hill ceanothus	Dicots	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G3T1	S1	1B.1			ALONG ROAD TO OCCIDENTAL WEST OF GREEN VALLEY.	EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS AROUND THE ROADS BETWEEN OCCIDENTAL AND GREEN VALLEY. EXACT LOCATION OF 1950 COLLECTION UNKNOWN. MAPPED BY CNDDB IN THE		ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1938 ROBBINS COLLECTION. NEEDS FIELDWORK.
Bombus occidentalis	western bumble bee	Insects	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G2G3	S1			USFS_S; XERCES_IM	FREESTONE.	GENERAL VICINITY OF THE COMMUNITY OF FREESTONE, ADJACENT TO SALMON CREEK.	ADDITIONAL DATABASE NOTE "IPOMOEA;" PRESUMABLY THE HOST PLANT ON WHICH THE SPECIMEN WAS FOUND.	1 COLLECTED 7 SEP 1950.
Dicamptodon ensatus	California giant salamander	Amphibians	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G3	S2S3		SSC	IUCN_NT	FREESTONE.	LOCALITY ONLY STATED AS FREESTONE. ACCORDING TO HIS MVZ FIELD NOTES, CAMP & FERRIS SPENT SEVERAL DAYS TRAPPING IN THIS AREA. 1973 COLLECTION FROM 1/2 MI N OF FREESTONE, LIKELY IN THE VICINITY OF SALMON CREEK.		TWO COLLECTED ON 10 JUN AND ONE COLLECTED ON 19 JUN, 1913. ONE COLLECTED ON 23 FEB 1973.
Rana boylii	foothill yellow-legged frog	Amphibians	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	Candidate Threatened	G3	S3		SSC	BLM_S; IUCN_NT; USFS_S	VICINITY OF FREESTONE.			2 COLLECTED ON 16 JUN 1913. COLLECTED IN 1935. DETECTED IN 1991 & 1992; DETECTIONS EXTEND W ALONG ESTERO RD & S ALONG VALLEY FORD RD.
Speyeria zerene myrtleae	Myrtle's silverspot butterfly	Insects	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	Endangered	None	G5T1	S1			XERCES_CI	VICINITY OF ESTERO RD & VALLEY FORD FRANKLIN SCHOOL ROAD INTERSECTION, BETWEEN ESTERO AMERICANO AND ESTERO SAN ANTONIO.	REFERRED TO AS "VALLEY FORD" IN 1935 COLLECTION.1991-92 DETECTIONS MADE AT ABOUT "1 MILE NE OF MCGR SITE, 0.5 MILES FROM ESTERO RD AND VALLEY FORD FRANKLIN SCHOOL ROAD INTERSECTION." POPULATION EXISTS JUST "SW OF THE TOWN OF VALLEY FORD."	CONSIDERED A SEPARATE POPULATION FROM THE MARIN COAST GOLF RANCH (MCGR) POPULATION.	SURVEYED DURING SPRING AND SUMMER OF 2002-2003; ESTIMATES NOT PROVIDED. POPULATION APPEARS MORE DENSE THAN ORIGINALLY DESCRIBED.
Lasthenia californica ssp. bakeri	Baker's goldfields	Dicots	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G3T1	S1	1B.2			NEAR BODEGA.	EXACT LOCATION UNKNOWN. MAPPED BY CNDDB IN THE GENERAL VICINITY OF THE TOWN OF BODEGA.		ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1934 YATES COLLECTION. NEEDS FIELDWORK.

Fritillaria liliacea	fragrant fritillary	Monocots	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G2	S2	1B.2	USFS_S	BODEGA.	EXACT LOCATION UNKNOWN. MAPPED BY CNDDB IN THE GENERAL VICINITY OF THE TOWN OF BODEGA.			ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A COLLECTION BY KRAGER. LABEL READS "SENT FROM BODEGA, MAR. 1924." NEEDS FIELDWORK. TYPE LOCALITY. MANY HISTORIC COLLECTIONS FROM THIS AREA; LAST COLLECTED IN 1946. SITE SHOULD BE CHECKED.
Delphinium bakeri	Baker's larkspur	Dicots	1 mile	Extirpated	Natural/Native occurrence	None	Endangered	Endangered	G1	S1	1B.1	SB_UCBBG	HEDRIN RANCH IN COLEMAN VALLEY, WEST OF OCCIDENTAL.		FENCE ROWS AND HEAVY LOWBRUSH. ASSOCIATED WITH POTENTILLA ELATA.	THREATENED BY GRAZING AND FARMING.	EXTIRPATED ACCORDING TO GUGGOLZ, 1986.
Sidalcea calycosa ssp. rhizomata	Point Reyes checkerbloom	Dicots	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G5T2	S2	1B.2		VALLEY FORD.				ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1886 COLLECTION BY BRANDEGEE. NEEDS FIELDWORK.
Trifolium amoenum	two-fork clover	Dicots	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	Endangered	None	G1	S1	1B.1	SB_RSABG; SB_USDA	FREESTONE.	EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS CENTERED ON THE TOWN OF FREESTONE.			1940 BAKER COLLECTION FROM "O'FARRELL HILL REGION, EAST SLOPE, NEAR WAGNON HOME" ATTRIBUTED TO THIS SITE AS IT IS IN THE REGION OF CANADA DE JONIVE.
Delphinium luteum	golden larkspur	Dicots	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	Endangered	Rare	G1	S1	1B.1	SB_UCBBG	GRATON.				SITE BASED ON 1925 AND 1927 HALLETT COLLECTIONS. SITE IS BASED ON A 1907 DOWS COLLECTION. AT 1996 RECOVERY WORKSHOP, PARTICIPANTS AGREED THAT IT'S UNLIKELY PLANTS STILL OCCUR HERE.
Chorizanthe valida	Sonoma spineflower	Dicots	1 mile	Possibly Extirpated	Natural/Native occurrence	None	Endangered	Endangered	G1	S1	1B.1	SB_RSABG	SEBASTOPOL.	EXACT LOCATION UNKNOWN. MAPPED BY CNDDB IN THE GENERAL VICINITY OF SEBASTAPOL.			OCCURRENCE IS BASED ON TWO BAKER COLLECTIONS FROM 1899 AND 1939. NEEDS FIELDWORK.
Lasthenia californica ssp. bakeri	Baker's goldfields	Dicots	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G3T1	S1	1B.2		MARSH ON GRAVENSTEIN HWY, SOUTH OF MOLINA NEAR SEBASTOPOL.	EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB IN THE VICINITY OF SEBASTOPOL.	MARSH AREA.		TYPE LOCALITY. COLLECTIONS FROM "LAGUNA OF SANTA ROSA CREEK", "NEAR THE LAGUNA ON THE FORESTVILLE ROAD", AND "NEAR SEBASTSOPOL" ATTRIBUTED TO THIS OCCURRENCE.
Horkelia tenuiloba	thin-lobed horkelia	Dicots	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G2	S2	1B.2	BLM_S; SB_RSABG	NEAR SEBASTOPOL SCHOOL.	UNABLE TO LOCATE "SEBASTOPOL SCHOOL". MAPPED BY CNDDB IN THE GENERAL VICINITY OF SEBASTOPOL.			ONLY SOURCE OF INFORMATION FOR THIS SITE IS A FIELD OBSERVATION FROM KUHN (DATE OF OBSERVATION UNKNOWN; MENTIONED IN MADRONO, 1916) THAT THIS PLANT HAS BEEN FOUND NEAR SEBASTOPOL. NEEDS FIELDWORK.
Viburnum ellipticum	oval-leaved viburnum	Dicots	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G4G5	S3?	2B.3		NEAR SEBASTOPOL.	EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS IN VICINITY OF SEBASTOPOL.			

Fritillaria liliacea	fragrant fritillary	Monocots	1 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G2	S2	1B.2		USFS_S	NEAR SEBASTOPOL.	EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS IN THE VICINITY OF SEBASTOPOL.				SITE BASED ON A 1940 NOLDEKE COLLECTION. A 1927 HUFFINE COLLECTION FROM "ON ROAD FROM OCCIDENTAL TO SEBASTOPOL" IS ALSO ATTRIBUTED TO THIS OCCURRENCE. NEEDS FIELDWORK.
Arctostaphylos bakeri ssp. bakeri	Baker's manzanita	Dicots	specific area	Presumed Extant	Natural/Native occurrence	Good	None	Rare	G2T1	S1	1B.1			NORTH AND EAST OF CAMP MEEKER AND OCCIDENTAL, ABOUT 0.5 TO 6.6 AIR MILES SOUTHEAST OF MONTE RIO.	EXTENSIVE OCCURRENCE MAPPED ALONG RIDGES EAST OF BOHEMIAN HIGHWAY AND NORTH OF OCCIDENTAL ROAD. MOSTLY MAPPED ACCORDING TO 1978 SOIL & VEGETATION MAP AND 1983 RAICHE MAP.	ON SERPENTINE AND PERIDOTITE. OUTCROPS, ROADSIDE, CHAPARRAL, OPEN AREAS. ASSOCIATED WITH CUPRESSUS SARGENTII, CEANOTHUS JEPSONII, ADENOSTOMA, POLYGALA CALIFORNICA, CAREX GLOBOSA, CALAMAGROSTIS KOELERIOIDES, CORDYLANTHUS, ETC.	ROADS RUNNING THROUGH POPULATION, ILLEGAL DUMPING, URBANIZATION, EXOTIC SPECIES.	TYPE LOCALITY. 14,100+ PLANTS ESTIMATED FOR MAJORITY OF OCC IN 1983. PARTS OF OCC: 1000+ PLANTS IN 1978, 100S IN 1987, "MANY" AT NW END IN 2004. NUMEROUS COLLECTIONS AND OBSERVATIONS FROM 1933 THROUGH 2015. INCLUDES FORMER OC #4, 5, 7-10.
Arborimus pomo	Sonoma tree vole	Mammals	nonspecific area	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G3	S3		SSC	IUCN_NT	ALONG BOHEMIAN HWY, FROM ABOUT 0.75 MI SOUTH OF OCCIDENTAL TO ABOUT 0.75 MI NORTH OF CAMP MEEKER.					1 NEST OBSERVED BY WOOSTER, 1995. 10 SPECIMENS AT UNIVERSITY OF PUGET SOUND; 7 AT MUSEUM OF VERTEBRATE ZOOLOGY, UC BERKELEY, 2 SPECIMENTS AT THE LA COUNTY MUSEUM OF NATURAL HISTORY. ALL COLLECTION DATES UNKNOWN.
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	Fish	nonspecific area	Presumed Extant	Natural/Native occurrence	Unknown	Endangered	Endangered	G4	S2?			AFS_EN	ABOUT 8.25 MILES OF GREEN VALLEY CREEK, TRIBUTARY TO THE RUSSIAN RIVER, NW OF SEBASTOPOL.		2011: SMOLT DETECTED WERE OF HATCHERY ORIGIN.			BROOD YEAR 1993-2003 FISH DOCUMENTED. DETECTED IN OUTMIGRANT FISH TRAP, 5 MAY 2011. 1 SPAWNED-OUT CARCASS OBSERVED 29 JAN; 3,529 JUVENILES OBSERVED IN SNORKEL SURVEYS IN MAY, JUN, JUL & AUG 2015.
Taxidea taxus	American badger	Mammals	3/5 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G5	S3		SSC	IUCN_LC	FREESTONE.	MAPPED ACCORDING TO LAT/LONG GIVEN BY MVZ; MAX ERROR DISTANCE: 0.25 MI.				MALE (MVZ #19746) COLLECTED BY CHARLES L. CAMP ON 19 JUN 1913. ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1947 HOFFMAN COLLECTION. NEEDS FIELDWORK.
Erigeron greenei	Greene's narrow-leaved daisy	Dicots	nonspecific area	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G3	S3	1B.2			DUTCH BILL CREEK.	EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB ALONG THE MAIN STEM OF DUTCH BILL CREEK.	SERPENTINE SOIL.			
Syncaris pacifica	California freshwater shrimp	Crustaceans	specific area	Presumed Extant	Natural/Native occurrence	Good	Endangered	Endangered	G2	S2			IUCN_EN	SALMON CREEK, FROM ABOUT 2.25 MILES UPSTREAM OF MOUTH TO JUST NORTH OF BODEGA ROAD AT FREESTONE, NE OF BODEGA BAY.	2004 SURVEY EXTENDED FROM 2.25 TO 2.75 MILES UPSTREAM. 2009 DETECTION ABOUT 0.3 MILES WEST OF BODEGA HWY AT FREESTONE VALLEY FORD RD. 2010 DETECTIONS JUST EAST OF BODEGA.	BEST HABITAT IN AREAS W/70-100% CANOPY & UNDERCUT BANKS. LITTLE OR NO CANOPY IN 1988/89 SURVEY; HIGHEST DENSITY BETWEEN BODEGA & WATSON SCHOOL. CATTLE USE POOLS. POPULATION & DISTRIBUTION HAVE FLUCTUATED DUE TO POLLUTION & DROUGHT.	OVER-GRAZING (1997), POLLUTION, EROSION, DEVELOPMENT, WATER DIVERSION & DROUGHT (2004), CATTLE (2010).	574 OBSERVED IN 1988-89 SURVEY. 1 ADULT & 3 JUVENILES OBS, 1 OCT 1997. 3-4 ADULTS & 23 JUVS OBS 4 JUN 2004. 5 OBS 2 JUN, 5 ADULTS ON 1 AUG & 33 ON 18 NOV 2005. 8 ADULTS OBS 28 AUG 2009. 55 ADULTS & 15 JUVS ON 7 OCT 2010.

Syncaris pacifica	California freshwater shrimp	Crustaceans	nonspecific area	Presumed Extant	Natural/Native occurrence	Good	Endangered	Endangered	G2	S2		IUCN_EN	PORTION OF GREEN VALLEY CREEK, TRIBUTARY TO THE LOWER RUSSIAN RIVER, FROM ABOUT 0.75 TO 5 MI UPSTREAM OF ITS CONFLUENCE.	UNKNOWN HOW FAR UPSTREAM AND DOWNSTREAM THIS POPULATION EXTENDS. MAPPED TO INCLUDE FURTHEST UPSTREAM & DOWNSTREAM DETECTIONS.	4TH ORDER STREAM WITH POOLS & MATURE RIPARIAN CANOPY. STREAMBED MOSTLY SILT/SAND, W/SOME GRAVEL/BOULDERS. STEELHEAD & COHO REARING AREA. 2017: FLOODING NECESSITATED EMERGENCY ROAD REPAIR (SEDIMENT EXCAVATION & CREEK RE-DIRECTION).	LOGGING, BARRIERS, DEVELOPMENT, DAIRY FARMS, DIVERSIONS, FLOOD CONTROL, SEWAGE, INVASIVE PREDATORS, SILTATION, ROADWORK.	DETECTED IN 1982-83. 28 OBSERVED IN 1988-89, 29 IN 1999, 4 IN 2000, 18 IN 2001, 3 ADULTS & 6 JUVS IN 2010. 44 INCL. GRAVID FEMALES OBS MAY 2011. 10 OBS IN 2013, 24+ IN 2015, 34+ IN 2016. 121+ INCL. GRAVID FEMALES OBS MAR-JUL 2017.
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	Fish	nonspecific area	Presumed Extant	Natural/Native occurrence	Good	Endangered	Endangered	G4	S2?		AFS_EN	ABOUT 4 MILES OF DUTCH BILL CREEK, FROM MONTE RIO UPSTREAM TO ABOUT ALLIANCE REDWOOD, NORTH (DOWNSTREAM) OF CAMP MEEKER.	MAPPED TO INCLUDE COORDINATES GIVEN FOR DOWNSTREAM TRAPPING STATIONS, SEINING SURVEYS & SNORKEL SURVEYS.	2013: "SPECIES BEING RELOCATED AS PART OF HABITAT ENHANCEMENT PROJECT WITHIN THE CREEK."		BROOD YEAR 1995 & 2001 FISH DETECTED. 532 CAUGHT & RELEASED IN SEINING SURVEYS 15 JUL - 16 SEP 2013. 201 SMOLT COUNTED IN DAILY TRAP CHECKS 23 MAR-7 MAY; 1092 JUVENILES OBS IN SNORKEL SURVEYS IN MAY & JUL 2015.
Coastal Brackish Marsh	Coastal Brackish Marsh	Marsh	specific area	Possibly Extirpated	Natural/Native occurrence	None	None	None	G2	S2.1			ESTERO AMERICANO, SW OF VALLEY FORD.	ABOUT 30 ACRES. DRAINED AND FILLED FOR AG, UNKNOWN IF SMALL REMNANTS REMAIN.	SEASONAL BRACKISH MARSH; SALICORNIA, JAUMEA & DISTICHLIS DOMINATE NEAR SHORELINE W/FRANKENIA IN BETTER DRAINED AREAS.		HABITAT FOR SEVERAL IMPORTANT ANIMAL TAXA. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.
Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	Fish	nonspecific area	Possibly Extirpated	Natural/Native occurrence	None	Threatened	None	G5T2T3Q	S2S3		AFS_TH	ESTERO AMERICANO, FROM ITS MOUTH IN BODEGA BAY TO THE VALLEY FORD FRANKLIN SCHOOL RD BRIDGE SW OF VALLEY FORD.	FORMER EXTENT IN WATERSHED UNKNOWN. DETECTED AT TRAWL STATION E-2 STATIONED 1 MILE UPSTREAM FROM OCEAN, AND AT TRAWL STATION E-5 STATIONED ABOUT 5.5 MILES UPSTREAM AT BRIDGE.	ANECDOTAL REPORTS CLAIM THIS WATERSHED ONCE SUPPORTED SPAWNING; POP NOW PRESUMED EXTIRPATED BY SOME. AS OF 1996, THERE WAS NO SALMONID SPAWNING HABITAT REMAINING IN THE ESTERO AMERICANO WATERSHED, THOUGH IT IS LISTED AS CRITICAL HABITAT.	SILTATION, FISH PASSAGE BARRIERS, VEGETATION REMOVAL, POOR WATER QUALITY (2014).	FISH SAMPLED ON 21 OCCASIONS FROM 1988-1990. ONE INDIVIDUAL EACH CAPTURED DURING GILLNET SURVEYS ON 21 DEC 1988 (E-5), 28 NOV 1989 (E-2), AND ON 9 MAR 1990 (E-2). THESE WERE PRESUMED "STRAYS" FROM OTHER WATERSHEDS; ONE WAS HATCHERY-REARED.
Eucyclogobius newberryi	tidewater goby	Fish	nonspecific area	Presumed Extant	Natural/Native occurrence	Poor	Endangered	None	G3	S3	SSC	AFS_EN; IUCN_VU	ESTERO AMERICANO, FROM ITS MOUTH IN BODEGA BAY TO THE VALLEY FORD FRANKLIN SCHOOL RD BRIDGE SW OF VALLEY FORD.	1945 COLLECTION FROM "BODEGA BAY, ESTERO AMERICANO BAY." FOUND UPSTREAM TO VALLEY FORD FRANKLIN SCHOOL RD CROSSING, AND UP TO STATION E-5 IN 1989-1990, JUST UPSTREAM OF THE CROSSING.	LARGE (750-1000AC) COASTAL LAGOON HIGHLY IMPACTED BY AGRICULTURE & GRAZING AS OF 2005. LITTLE OR NO GENETIC EXCHANGE BETWEEN POPS. SANDBAR NOT COMPLETELY CLOSED, ESTUARY PARTIALLY TIDAL; UPPER PORTION OF ESTUARY WAS HYPERSALINE IN 1997.	POOR WATER QUALITY FROM EXCESS NUTRIENTS & SEDIMENTATION/SILTATION DUE TO GRAZING, RUNOFF; EXOTIC FISH SPECIES (2005).	4 COLLECTED ON 26 JUN 1945. 30 COLLECTED ON 12 OCT 1977. EXTANT MID-1984. UNKNOWN NUMBER COLLECTED 1988 & 1990. LARVAE FOUND IN NETS & 4 ADULTS IN OTTER TRAWLS, NOV 1989-SEP 1990. POP CONFIRMED EXTANT IN 1996 & 1997. COLLECTED OCT 1999.
Arborimus pomo	Sonoma tree vole	Mammals	nonspecific area	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G3	S3	SSC	IUCN_NT	0.5 MI NORTH OF FREESTONE, 0.5 MI NORTHWEST OF FREESTONE, AND FREESTONE.				14 SPECIMENS AT UNIVERSITY OF PUGET SOUND, COLLECTION DATE UNKNOWN.
Rana draytonii	California red-legged frog	Amphibians	2/5 mile	Presumed Extant	Natural/Native occurrence	Unknown	Threatened	None	G2G3	S2S3	SSC	IUCN_VU	ABOUT 1.8 MILES NW OF CARROLL RD AT VALLEY FORD RD, 1.6 MILES NE OF THE TOWN OF VALLEY FORD.	MAPPED TO INCLUDE LOCATIONS GIVEN FOR PONDS A & B. INDIVIDUAL WAS DETECTED IN ONE OF THESE TWO PONDS.		MANY BULLFROGS ALSO DETECTED IN SAME POND.	ONE LARGE ADULT FOUND DURING NIGHT SURVEY ON 14 SEP 1994.

Ardea alba	great egret	Birds	2/5 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G5	S4		CDF_S; IUCN_LC	VICINITY OF VALLEY FORD.	MAPPED CENTERED ON GIVEN COORDINATES.				ABOUT 21 ACTIVE NESTS OBSERVED 6 MAY 2011. DOWNY YOUNG AND INCUBATION OBSERVED.
Alopecurus aequalis var. sonomensis	Sonoma alopecurus	Monocots	2/5 mile	Presumed Extant	Natural/Native occurrence	Unknown	Endangered	None	G5T1	S1	1B.1	SB_RSABG	NEAR GREEN VALLEY SCHOOL, WEST OF GRATON.	EXACT LOCATION UNKNOWN, MAPPED BY CNDDB IN VICINITY OF GREEN VALLEY SCHOOL. 1932 COLLECTION FROM "3 MI W GRATON, <SCHACKLEY> FLAT, 150 FT" ATTRIB HERE, UNABLE TO LOCATE FLAT; SCHOOL IS <3 MI W OF GRATON, BUT IS CLOSER TO GIVEN ELEVATION.	FLAT, DAMP, MOIST PLACE.			MAIN SOURCE OF INFORMATION FOR THIS SITE IS A 1936 YATES COLLECTION. A 1932 ARMSTRONG COLLECTION IS ALSO ATTRIBUTED HERE. NEEDS FIELDWORK.
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	Dicots	2/5 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G5T2	S2	1B.2		CIRCA 1.5 MILES NORTHWEST OF BODEGA AT RANCHO BODEGA.					ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1994 COLLECTION BY ROCKWOOD AND ESPOSITO. 1000-10,000 PLANTS IN 1978; 10,000+ IN 1981; 5000+ IN 1987. 300-500 IN 2001. 1000S ALONG STOETZ LN IN 2009.
Cordylanthus tenuis ssp. capillaris	Pennell's bird's-beak	Dicots	specific area	Presumed Extant	Natural/Native occurrence	Good	Endangered	Rare	G4G5T1	S1	1B.2	SB_RSABG	ALONG STOETZ LANE ABOUT 0.5-1.0 MI NW OF JUNCTION WITH HARRISON GRADE ROAD, 2 MILES NE OF OCCIDENTAL.	PORTION OF SITE IS WITHIN HARRISON GRADE ECOLOGICAL RESERVE. SOME PRIVATE LANDOWNERS WORKING WITH TNC TO PROTECT PLANTS ON THEIR LAND. MAPPED ACCORDING TO A 1987 HORENSTEIN MAP.	IN OPENINGS ON SERPENTINE ISLAND WITH REDDISH ROCKY SOIL. MOST VIGOROUS IN DISTURBED AREAS. WITH ERIOPHYLLUM AND LOMATIUM. ASSOCIATED SURROUNDING VEG INCLUDES ARCTOSTAPHYLOS BAKERI, CEANOTHUS JEPSONII, CUPRESSUS SARGENTII. 500-800 FT.	DUMPING, OFF-ROAD VEHICLE USE, DEVELOPMENT THREATEN. TAENIATHERUM CAPUT-MEDUSAE ENCROACHING ON POPULATION.	SEVERAL COLONIES OF 70-300 PLANTS SEEN AT HARRISON GRADE IN 2011; COLONIES ALONG STOETZ LN REPORTED AS DENSE.
Syncaris pacifica	California freshwater shrimp	Crustaceans	nonspecific area	Presumed Extant	Natural/Native occurrence	Good	Endangered	Endangered	G2	S2		IUCN_EN	JONIVE CREEK (TRIBUTARY TO ATASCADERO CREEK) & TRIBUTARIES INCLUDING REDWOOD & HUDSPETH CREEKS, 3.5 MI W OF SEBASTOPOL.	LOWER RUSSIAN RIVER WATERSHED. 1988-89 SURVEYS IN 0.75-MI REACH OF JONIVE CREEK, FROM JUST D/S OF FERGUSON RD TO SEXTON RD. 1994, 2001, 2017: IN REDWOOD CK. 2015: IN JONIVE & HUDSPETH CKS. 2017-18: IN UNNAMED DRAINAGE TO REDWOOD CK.	JONIVE CK POOLS LINED W/SAND & GRAVEL, TYPICAL RIPARIAN VEG W/NEARLY COMPLETE CANOPY COVER. REDWOOD CK LINED W/ALDER RIPARIAN. STEELHEAD ALSO FOUND. 2017-18 SURVEYS FOR CULVERT REPLACEMENT PROJECT ON UNNAMED DRAINAGE W/UNDERCUT BANKS.	RIPARIAN HABITAT REDUCTION, WATER DIVERSION, ROADS, BANK PROTECTION, DEVELOPMENT. BARRIERS, CONSTRUCTION, RUNOFF (2018).	227 DETECTED IN 1988-89 SURVEYS. 7 ADULTS & 3 JUVENILES DET 29 MAR 1994. 4 DET 19 OCT 2001. 72 DET IN JONIVE CK & 10 IN HUDSPETH CK, 2 JUN 2015. 9 DET 1 MAY & 8 ON 9 AUG 2017. 55 RELOCATED AWAY FROM CONSTRUCTION, JUL 2018.
Athene cunicularia	burrowing owl	Birds	nonspecific area	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G4	S3		SSC	BLM_S; IUCN_LC; USFWS_BCC	NORTH SIDE OF ESTERO AMERICANO ABOUT 1.3 MILES SE OF HWY 1 AT BODEGA HWY, 2 MILES W OF VALLEY FORD.	MAPPED TO PROVIDED MAPS.	NUMEROUS BADGER BURROWS IN OPEN GRASSLAND APPEARED TO PROVIDE OVERWINTERING HABITAT. PROPERTY UNDER CONSERVATION EASEMENT. SITE OF PROPOSED NATURE/RECREATION TRAIL.		1 OBSERVED ON 4 MAR 2011. SIGN INCLUDING PELLETS AND WHITEWASH OBSERVED AROUND NUMEROUS BURROWS DURING WINTER SEASON SURVEYS 2010-2012. OLD PELLETS OBSERVED NEAR COLLAPSED BURROW IN APR-JUN 2014.
Rana draytonii	California red-legged frog	Amphibians	nonspecific area	Presumed Extant	Natural/Native occurrence	Unknown	Threatened	None	G2G3	S2S3		SSC	IUCN_VU	THURSTON CREEK, TRIBUTARY TO NOLAN CREEK; NE OF BODEGA.	EXACT DETECTION LOCATIONS NOT PROVIDED.	ISOLATED POOLS IN EPHEMERAL STREAM, STEEP BANKS & GRAVEL BARS WITH SOME EROSION. IN AGRICULTURAL/RURAL RESIDENTIAL AREA. TEMPORARY DISTURBANCE NOTED DUE TO INSTALLATION OF STREAM ENHANCEMENT PROJECT.	POSSIBLE PREDATION FROM DOMESTIC OR FERAL DOGS AND CATS.	10 JUVENILES OBSERVED ON 27 AUG 2014.
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	Dicots	nonspecific area	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G5T2	S2	1B.2		STOETZ LANE, 2 MILES NE OF OCCIDENTAL.	EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS ALONG ENTIRE LENGTH OF STOETZ LANE BASED ON 2015 PHOTOS BY DOYEN.	ON SERPENTINE SUBSTRATE.			SITE BASED ON 2015 DOYEN PHOTOS IN CALPHOTOS. NEEDS FIELDWORK.

Anodonta oregonensis	Oregon floater	Mollusks	nonspecific area	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G5Q	S2?			SALMON CREEK, SOUTH OF FREESTONE.	EXACT COLLECTION LOCATION UNKNOWN. LOCALITY IS "SALMON CREEK BETWEEN FREESTONE AND VALLEY FORD." VALLEY FORD IS NOT ON SALMON CREEK, BUT FREESTONE VALLEY FORD ROAD IS; MAPPED BETWEEN FREESTONE & INTXN OF BODEGA HWY & VALLEY FORD RD.	AN ANODONTA CALIFORNIENSIS WITH THE SAME LOCALITY WAS COLLECTED BEFORE 1948 (OCC #5), IT IS POSSIBLE THESE WERE TAKEN BY THE SAME COLLECTOR; DOCUMENTATION IS INCOMPLETE.		1 COLLECTED ON 27 MAR 1932.
Anodonta californiensis	California floater	Mollusks	nonspecific area	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G3Q	S2?		USFS_S	SALMON CREEK, SOUTH OF FREESTONE.	EXACT COLLECTION LOCATION UNKNOWN. LOCALITY REPORTED AS "SALMON CREEK BETWEEN FREESTONE AND VALLEY FORD." VALLEY FORD IS NOT ON SALMON CREEK, BUT FREESTONE VALLEY FORD ROAD IS; MAPPED BETWEEN FREESTONE & INTXN OF BODEGA HWY & VALLEY FORD RD	AN ANODONTA OREGONENSIS WITH THE SAME LOCALITY WAS COLLECTED ON 27 MAR 1932 (OCC #1), IT IS POSSIBLE THESE WERE TAKEN BY THE SAME COLLECTOR; DOCUMENTATION IS INCOMPLETE.		COLLECTED ON UNKNOWN DATE, AS REPORTED IN 1948 ARTICLE BY W.M. INGRAM.
Taxidea taxus	American badger	Mammals	nonspecific area	Presumed Extant	Natural/Native occurrence	Good	None	None	G5	S3	SSC	IUCN_LC	NORTH SIDE OF ESTERO AMERICANO RIVER, ABOUT 1.4 MILES SE OF HWY 1 AT BODEGA HWY & 1.7 MILES WEST OF VALLEY FORD.	MAPPED TO INCLUDE PROVIDED LOCATIONS.	GRASSLAND USED FOR GRAZING. PROPERTY WAS PROPOSED FOR SUBDIVISION IN 2007, BUT WAS PROTECTED BY A CONSERVATION EASEMENT IN 2012. SITE OF PROPOSED RECREATION/NATURE TRAIL (2014).	TRAIL CONSTRUCTION POSES POTENTIAL THREAT (2014).	NUMEROUS BURROWS OBSERVED ON 11 JUN 2007. LAND OWNER INDICATED A LONG HISTORY OF BADGER PRESENCE. OLD AND FRESH BURROWS OBSERVED IN 2014.
Rana boylii	foothill yellow-legged frog	Amphibians	nonspecific area	Presumed Extant	Natural/Native occurrence	Good	None	Candidate Threatened	G3	S3	SSC	BLM_S; IUCN_NT; USFS_S	GREEN VALLEY CREEK, NW OF MOUNT PISGAH, ABOUT 3 MILES WEST OF GRATON.	MAPPED TO 2018 SURVEY STREAM REACH, FROM 0.5 MILE UPSTREAM TO 0.8 MILE DOWNSTREAM OF THE CROSSING OF GREEN VALLEY ROAD.		POSSIBLE THREAT FROM WATER PUMPING BY ADJACENT LANDOWNERS.	1 INDIVIDUAL OBSERVED ON 23 AUG 2001. ADULTS DETECTED DURING A SNORKEL SURVEY ON 27 JUN 2018.
Alopecurus aequalis var. sonomensis	Sonoma alopecurus	Monocots	nonspecific area	Presumed Extant	Natural/Native occurrence	Unknown	Endangered	None	G5T1	S1	1B.1		SB_RSABG	1.5 MILES EAST OF OCCIDENTAL.	EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB ALONG GRATON ROAD TO ENCOMPASS GIVEN ELEVATION OF 300 FT AND PORTION OF ROAD THAT IS 1.5 ROAD MILES EAST OF OCCIDENTAL.	SWAMP.		ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1937 COLLECTION BY YATES. NEEDS FIELDWORK.
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	Dicots	nonspecific area	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G5T2	S2	1B.2			ROAD TO PETALUMA, 1 MILE EAST OF VALLEY FORD.			ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1966 COLLECTION BY FULLER.
Arctostaphylos bakeri ssp. bakeri	Baker's manzanita	Dicots	specific area	Presumed Extant	Natural/Native occurrence	Good	None	Rare	G2T1	S1	1B.1			ABOUT 1 MILE EAST OF OCCIDENTAL; ALONG GRATON ROAD AND OCCIDENTAL ROAD NEAR TANUDA RD AND FACENDINI LANE.	4 POLYGONS MAPPED BY CNDDB ACCORDING TO A 1983 MAP BY RAICHE. INCLUDES COLLECTIONS FROM "1 MI E OF OCCIDENTAL, SEC 35," "GRATON RD 1 MI E OF OCCIDENTAL," "GRATON RD NEAR INTERSECTION WITH TANUDA ROAD," ETC.	ON SERPENTINE AND NON-SERPENTINE SOILS. OPEN GRASSY BANK, THIN FOREST OPENING. ASSOCIATED WITH QUERCUS SPP., PSEUDOTSUGA MENZIESII, ARBUTUS MENZIESII, AND ARCTOSTAPHYLOS MANZANITA SSP. MANZANITA.	DIRT ROAD, NEARBY RESIDENTIAL AREA, HEAVY GRAZING & BULLDOZING, INVASION BY CYTISUS, WASTEWATER PLANT EXPANSION.	200-300+ PLANTS OBSERVED IN 1983. ALSO SEEN IN 1933, 1935, 1936 & 1973. 2006 HERRICK COMMUNICATION MENTIONS WASTEWATER EXPANSION THREAT, INDICATES THAT PLANTS LIKELY SEEN HERE MORE RECENTLY THAN 1983. INCLUDES FORMER OCCURRENCES 6 & 13.
Rana draytonii	California red-legged frog	Amphibians	1/5 mile	Presumed Extant	Natural/Native occurrence	Good	Threatened	None	G2G3	S2S3		SSC	IUCN_VU	EBABIAS CREEK, ABOUT 0.9 AIR MILES SSE OF THE JUNCTION OF BODEGA HWY AT FREESTONE VALLEY FORD RD, 3 MILES E OF BODEGA.	MAPPED TO PROVIDED LOCATION.	INDIVIDUAL DETECTED ON SURFACE OF POOL IN CREEK ATOP EMERGENT VEGETATION. RIPARIAN HABITAT DOMINATED BY WILLOW & MIX OF UNDERSTORY SPECIES SURROUNDED BY GRAZED PASTURE AND OPEN SPACE. DISTURBANCE FROM STREAMBANK EROSION NOTED.	PROXIMITY TO ROAD.	1 ADULT OBSERVED BASKING ON 2 JUL 2009.

Trifolium amoenum	two-fork clover	Dicots	nonspecific area	Presumed Extant	Natural/Native occurrence	Unknown	Endangered	None	G1	S1	1B.1		SB_RSABG; SB_USDA	HIGHWAY 1, 2 MILES WEST OF VALLEY FORD.	ALONG ROADSIDE. MAPPED BY CNDDB 1.5-2.5 MILES WEST OF VALLEY FORD ON HIGHWAY 1.	GROWING IN CLAY SOIL.		ONLY SOURCE OF INFORMATION IS A 1940 HELLER COLLECTION. A 1900 CHANDLER COLLECTION FROM "BODEGA" IS ATTRIBUTED TO THIS SITE.
Antrozous pallidus	pallid bat	Mammals	1/5 mile	Presumed Extant	Natural/Native occurrence	Poor	None	None	G5	S3		SSC	BLM_S; IUCN_LC; USFS_S; WBWG_H	0.2 MILE WEST OF JOY ROAD, 0.6 MILE NNW OF JOY SCHOOL, ABOUT 2 MILES SW OF OCCIDENTAL.	PRIVATE HOMEOWNER, IN A RURAL RESIDENTIAL AREA.	MIXED CONIFER/ NON-NATIVE TREES/ GRASS.	EVICTION FROM HOUSE.	30 - 50 BATS (BREEDING POPULATION) EVICTED FROM STRUCTURE; ~30 ADULTS AND ~20 JUVENILES, 1996.
Emys marmorata	western pond turtle	Reptiles	1/5 mile	Presumed Extant	Natural/Native occurrence	Good	None	None	G3G4	S3		SSC	BLM_S; IUCN_VU; USFS_S	ALONG SALMON CREEK, 0.6 MILE WNW OF THE TOWN OF BODEGA.	LOCATED ALONG SALMON CREEK AND IN A SMALL FARM POND ADJACENT TO THE CREEK.	HABITAT CONSISTS OF BAY/ALDER RIPARIAN ALONG SALMON CREEK; CREEK IS DEEPLY INCISED, WITH STEEP, WELL-VEGETATED BANKS. CREEK GOES NEARLY DRY DURING SUMMER. LIGHTLY GRAZED PASTURE ADJACENT TO CREEK AND POND. CREEK SUPPORTS SYNCARIS PACIFICA.	SOME CREEK AREAS ARE THREATENED BY SEVERE BANK EROSION.	LANDOWNER REPORTED SEEING 4-INCH JUVENILE TURTLES IN 1995. IN 1996, LANDOWNER REPORTED SEEING 3-INCH JUVENILES; 16 ADULTS WERE OBSERVED ON 12 AUGUST 1996.
Alopecurus aequalis var. sonomensis	Sonoma alopecurus	Monocots	1/5 mile	Presumed Extant	Natural/Native occurrence	Unknown	Endangered	None	G5T1	S1	1B.1		SB_RSABG	OCCIDENTAL MARSH, ABOUT 0.75 MILE NORTHEAST OF OCCIDENTAL ON GRATON ROAD. SOUTH OF ROAD.		OPEN, MARSHY GROUND.	MODERATELY GRAZED.	SITE IS BASED ON A 1957 RUBTZOFF COLLECTION. NO PLANTS FOUND BY FELLERS IN 1987, BUT SUITABLE HABITAT STILL EXISTS.
Alopecurus aequalis var. sonomensis	Sonoma alopecurus	Monocots	1/5 mile	Presumed Extant	Natural/Native occurrence	Unknown	Endangered	None	G5T1	S1	1B.1		SB_RSABG	FREESTONE MARSH, APPROXIMATELY 1 MILE NORTHWEST OF FREESTONE ON BOHEMIAN HIGHWAY.	EXACT LOCATION UNKNOWN, MAPPED BY CNDDB AS A BEST GUESS.		AREA IS ONLY MODERATELY GRAZED AND HABITAT STILL EXISTS.	COLLECTED HERE BY RUBTZOFF IN 1959 AND 1962. NO PLANTS FOUND IN 1987 SEARCH BUT FELLERS STILL THINKS OCC MAY BE EXTANT.
Trifolium amoenum	two-fork clover	Dicots	1/5 mile	Presumed Extant	Natural/Native occurrence	Unknown	Endangered	None	G1	S1	1B.1		SB_RSABG; SB_USDA	1 MILE NORTH OF VALLEY FORD.	MAPPED 1 MILE NORTH OF VALLEY FORD ALONG FREESTONE VALLEY FORD ROAD.			ONLY SOURCE OF INFORMATION IS A 1941 HOOVER COLLECTION. NEEDS FIELDWORK.
Emys marmorata	western pond turtle	Reptiles	1/5 mile	Presumed Extant	Natural/Native occurrence	Good	None	None	G3G4	S3		SSC	BLM_S; IUCN_VU; USFS_S	UNNAMED TRIBUTARY TO REDWOOD CREEK, TRIBUTARY TO JONIVE CREEK, 4 MILES WEST OF SEBASTOPOL.	FOUND IN A SMALL POND ON AN UNNAMED CREEK THAT IS A TRIBUTARY TO REDWOOD CREEK.	HABITAT SURROUNDING CREEK/POND IS PASTURE ON ONE SIDE AND REDWOOD FOREST ON THE OTHER.		5 ADULTS OBSERVED ON 29 MARCH 1994; NO JUVENILES OBSERVED.
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	Dicots	1/5 mile	Possibly Extirpated	Natural/Native occurrence	None	None	None	G5T2	S2	1B.2			PERRY MARSH.		DRIER GROUND OF MARSH.	DEVELOPMENT.	OCCURRENCE KNOWN ONLY FROM TWO 1945 COLLECTIONS FROM HOWELL AND BAKER. MARSH WAS DESTROYED BY DEVELOPMENT IN THE 1970S. NO PLANTS OBSERVED IN 1988. OCCURRENCE IS PROBABLY EXTIRPATED.
Rhynchospora californica	California beaked-rush	Monocots	1/5 mile	Extirpated	Natural/Native occurrence	None	None	None	G1	S1	1B.1		BLM_S	PERRY MARSH, TWIN PINE RANCH, ABOUT 2 MILES NORTH OF SEBASTOPOL ON THE GRAVENSTEIN HIGHWAY.		FOUND IN MARSH AREA.	AREA SOLD IN 1971 AND MARSH DESTROYED SAME YEAR.	SPECIES LAST SEEN IN 1945. NOT FOUND IN 1977, 1988 SEARCHES.

Rhynchospora capitellata	brownish beaked-rush	Monocots	1/5 mile	Possibly Extirpated	Natural/Native occurrence	None	None	None	G5	S1	2B.2			PERRY MARSH.	EXACT LOCATION UNKNOWN, MAPPED BY CNDDB AS A BEST GUESS.			ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1945 HOWELL COLLECTION. ACCORDING TO GUGGOLZ (1998), HABITAT HAS BEEN SEVERELY DEGRADED WITH ONLY A SMALL AMOUNT OF WETLAND REMAINING. NEEDS FIELDWORK.
Rhynchospora globularis	round-headed beaked-rush	Monocots	1/5 mile	Possibly Extirpated	Natural/Native occurrence	None	None	None	G4	S1	2B.1			PERRY MARSH, TWIN PINE RANCH, ABOUT 2 MILES NORTH OF SEBASTOPOL ON THE GRAVENSTEIN HIGHWAY.		FOUND IN MARSH AREA.		OCCURRENCE KNOWN ONLY FROM TWO COLLECTIONS BY BAKER AND HOWELL, BOTH FROM 1945. MARSH HAS BEEN DESTROYED BY DEVELOPMENT. OCCURRENCE IS PROBABLY EXTIRPATED.
Campanula californica	swamp harebell	Dicots	1/5 mile	Possibly Extirpated	Natural/Native occurrence	None	None	None	G3	S3	1B.2		BLM_S	PERRY MARSH, 1 MI NW OF SEBASTOPOL.			DEVELOPMENT IS A THREAT. SPRAY FIELD, SEE BELOW.	MARSH DESTROYED IN THE 1970'S BY APPLE TIME FACTORY USING IT AS A SPRAY FIELD FOR THEIR EFFLUENT. NO HABITAT WAS SEEN IN 1988. LACK OF ACCESS HAS PREVENTED FURTHER FIELDWORK FROM BEING CONDUCTED.
Delphinium luteum	golden larkspur	Dicots	nonspecific area	Presumed Extant	Natural/Native occurrence	Unknown	Endangered	Rare	G1	S1	1B.1		SB_UCBBG	1.5 TO 2.0 MILES WEST OF BODEGA ON BODEGA BAY ROAD.		ON ROCK OUTCROP AND LOOSE ROCK ON OPEN HILLSIDE.		SITE BASED ON HISTORIC COLLECTIONS. ACCORDING TO B. LOVELL, THIS SITE VISITED IN 1983 AND NO HABITAT EXISTS HERE; COLLECTIONS MAY BE REFERENCING EO #5 OR #11. VAGUE COLLECTIONS FROM "BODEGA" AND "W OF BODEGA" ARE ALSO ATTRIBUTED HERE.
Agelaius tricolor	tricolored blackbird	Birds	nonspecific area	Presumed Extant	Natural/Native occurrence	Unknown	None	Threatened	G2G3	S1S2		SSC	BLM_S; IUCN_EN; NABCI_RWL; USFWS_BCC	AMERICANO CREEK, ALONG THE SONOMA/MARIN COUNTY LINE, EAST OF VALLEY FORD.				BREEDING COLONY OBSERVED ON 13 JUNE 1977; FLEDGING SUCCESS UNKNOWN. 200 PLANTS SEEN IN 1987. 2011 POP NUMBERS AND HABITAT DESCRIBED AS "SIGNIFICANTLY REDUCED" FROM PREVIOUS YEARS. ALSO SEEN 1990-1992, 1994, 1997, 2013. MOST OF SITE NOW PROTECTED BY ECOLOGICAL PRESERVE AND CONSERVATION EASEMENT.
Cordylanthus tenuis ssp. capillaris	Pennell's bird's-beak	Dicots	specific area	Presumed Extant	Natural/Native occurrence	Good	Endangered	Rare	G4G5T1	S1	1B.2		SB_RSABG	ALONG EAST SIDE OF BOHEMIAN HIGHWAY, FROM 1.0-2.2 MILES NW OF CAMP MEEKER.	MAPPED AS 6 POLYGONS BASED PRIMARILY ON A 1994 GUGGOLZ MAP, IN THE SE 1/4 SEC 17, SW 1/4 SEC 16, AND N 1/2 SECTION 21. PLANTS MAY BE EXTIRPATED IN S-MOST POLY: 12 PLANTS IN 1986, AREA REVISITED IN 2005 BUT NO SUITABLE HABITAT FOUND.	IN MEADOWS AND BARREN AREAS ON STEEP SLOPES ON HENNEKE GRAVELLY LOAM UNDERLAIN BY SERPENTINE BEDROCK. POPULATION IS SURROUNDED BY FOREST DOMINATED BY REDWOOD AND DOUGLAS-FIR.	SLOPE EROSION, EVIDENCE OF TARGET SHOOTING. ORVS, CAMPING/HIKING SEVERELY IMPACTING SITE IN 1997. ROAD MAINTENANCE.	

Dicamptodon ensatus	California giant salamander	Amphibians	nonspecific area	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G3	S2S3	SSC	IUCN_NT	CONFLUENCE OF GRAB CREEK AT DUTCH BILL CREEK, BOHEMIAN HIGHWAY, ABOUT 3.5 ROAD MILES SSE OF MONTE RIO / RUSSIAN RIVER.		PART OF THIS AREA APPEARS TO BE OWNED BY A PRIVATE CAMP THAT ADVERTISES ENVIRONMENTAL EDUCATION PROGRAMS FOR CHILDREN: WESTMINSTER WOODS CAMP AND CONFERENCE CENTER. STEELHEAD ALSO FOUND IN THIS AREA.		DICAMPTODON DETECTED DURING ELECTROFISHING SURVEYS IN GRAB CREEK ON 30 OCT 1997. 12 SEINED AND RELEASED IN DUTCH BILL CREEK ON 15 JUL 2013.
Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	Fish	nonspecific area	Possibly Extirpated	Natural/Native occurrence	None	Threatened	None	G5T2T3Q	S2S3		AFS_TH	3 O. MYKISS UP TO 15" IN LENGTH OBSERVED IN POOLS, SEP 1994. THE FISH MAY HAVE BEEN STRANDED "HALF-POUNDER" STEELHEAD OR RESIDENT RAINBOWS. ANECDOTAL REPORTS CLAIM THIS WATERSHED ONCE SUPPORTED SPAWNING; POPULATION NOW PRESUMED EXTIRPATED.				
Dicamptodon ensatus	California giant salamander	Amphibians	nonspecific area	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G3	S2S3	SSC	IUCN_NT	UNNAMED TRIBUTARY OF AMERICANO CREEK, ABOUT 1.6 MI NNW OF CARROLL ROAD AT VALLEY FORD RD, 2.5 MI NE OF VALLEY FORD. TANNERY CREEK, ABOUT 1 MILE NORTH OF SALMON CREEK, NE OF BODEGA BAY.	FORMER EXTENT IN WATERSHED UNKNOWN. MAPPED TO VICINITY OF 1994 DETECTION. A SHORT SECTION OF THE CREEK WAS SURVEYED BY ELECTROFISHING.	PERENNIAL POOLS IN STREAM THROUGH NARROW SANDSTONE GORGE. ABOVE & BELOW THE GORGE, PATCHES OF DENSE RIPARIAN GROWTH WERE INTERSPERSED WITH DENUDED AREAS OF SLUMPED BANKS & GULLIES; HEAVY SILTATION THROUGHOUT. STEELHEAD WERE ALSO FOUND HERE.	WATER AND HABITAT QUALITY WERE HEAVILY IMPACTED BY CATTLE GRAZING AND TRAMPLING (1994).	DICAMPTODON DETECTED DURING ELECTROFISHING SURVEYS ON 26 JUL 2002.
Rana draytonii	California red-legged frog	Amphibians	specific area	Presumed Extant	Natural/Native occurrence	Good	Threatened	None	G2G3	S2S3	SSC	IUCN_VU	EBABIAS CREEK AND AN UNNAMED TRIBUTARY, TRIBUTARY TO ESTERO AMERICANO, 2 MILES NNE OF VALLEY FORD. PURRINGTON CREEK, ABOUT 0.5 MILE UPSTREAM OF GREEN VALLEY CREEK, SE OF MOUNT PISGAH, 4 MILES NW OF SEBASTOPOL.		HABITAT CONSISTS OF CREEKS AND A FARM POND; SURROUNDED BY FALLOW GRASSLAND / PASTURE.	THREATENED BY CONVERSION TO VINEYARDS.	1 JUVENILE FOUND IN A WETLAND ASSOCIATED WITH EBABIAS CREEK AND 5 ADULTS FOUND IN A FARM POND ON 12 MAR 2001. 1 JUVENILE OBSERVED ON 13 MAR 2001.
Dicamptodon ensatus	California giant salamander	Amphibians	nonspecific area	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G3	S2S3	SSC	IUCN_NT	ALONG ESTERO AMERICANO, AT THE MOUTH OF AN UNNAMED CREEK 2 MILES WEST OF THE TOWN OF VALLEY FORD, NE OF BODEGA BAY.	ACCESSIBLE BY GRATON ROAD. A SHORT SECTION OF THE CREEK WAS SURVEYED BY ELECTROFISHING.	STEELHEAD WERE ALSO FOUND HERE.		DICAMPTODON DETECTED DURING ELECTROFISHING SURVEYS IN AUG 1992.
Emys marmorata	western pond turtle	Reptiles	1/10 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G3G4	S3	SSC	BLM_S; IUCN_VU; USFS_S	EBABIAS CREEK, ABOUT 0.7 MILES NE OF FREESTONE		PROPERTY UNDER CONSERVATION EASEMENT. NATURE/RECREATION TRAIL CONSTRUCTION PLANNED FOR SITE.	TRAIL CONSTRUCTION, MAINTENANCE, AND RECREATIONAL USE POSE POSSIBLE THREATS.	1 DETECTED ON 15 APR 2014.
Syncaris pacifica	California freshwater shrimp	Crustaceans	1/10 mile	Presumed Extant	Natural/Native occurrence	Good	Endangered	Endangered	G2	S2		IUCN_EN	VALLEY FORD RD AT FREESTONE RANCH RD AND 1.6 MILES SSE OF FREESTONE.	MAPPED TO PROVIDED MAP.	LOW GRADIENT STREAM, MODERATE-SIZED POOLS SEPARATED BY RIFFLES; SUBSTRATE MAINLY FINE W/SOME GRAVEL; CHANNEL BOTTOM LINED W/VEGETATION IN SHALLOW AREAS; IN WILLOW-DOMINATED RIPARIAN WOODLAND SURROUNDED BY GRAZED PASTURE & OPEN SPACE.	STREAMBANK EROSION.	3 ADULTS OBSERVED ON 5 JUN 2008.
Rana draytonii	California red-legged frog	Amphibians	1/10 mile	Presumed Extant	Natural/Native occurrence	Good	Threatened	None	G2G3	S2S3	SSC	IUCN_VU	SALMON CREEK, ABOUT 0.25 MILES SW OF BODEGA HWY AT FREESTONE VALLEY FORD RD, 2.7 MILES ENE OF BODEGA.	MAPPED TO PROVIDED COORDINATES, LOCATION IS APPROXIMATE.	LOW GRADIENT CHANNEL CHARACTERIZED BY LONG, DEEP POOLS WITH DENSE CANOPY OF WILLOW AND ALDER. SURROUNDING LAND USES INCLUDED GRAZING, RURAL RESIDENTIAL, OPEN SPACE, & HIGHWAY.	TRAFFIC FROM LOCAL ROAD, RUNOFF.	1 ADULT OBSERVED BASKING ON 26 JUL AND 1 SEP, 2011.
Athene cunicularia	burrowing owl	Birds	1/10 mile	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G4	S3	SSC	BLM_S; IUCN_LC; USFWS_BCC	VICINITY OF CARROLL RD ABOUT 0.75 MILES N OF THE VALLEY FORD RD INTERSECTION, W OF BLOOMFIELD.	MAPPED TO VICINITY OF CENSUS BLOCK 4240-510 FROM 1997 DATABASE.			2 PAIRS DETECTED DURING 1981-1985 SURVEYS. 1 PAIR DETECTED DURING 1986-1990 SURVEYS.

Pleuropogon hooverianus	North Coast semaphore grass	Monocots	1/10 mile	Possibly Extirpated	Natural/Native occurrence	None	None	Threatened	G2	S2	1B.1		BLM_S; SB_BerrySB; SB_RSABG	FREESTONE AREA, ON NORTH SIDE OF FREESTONE FLAT ROAD ON ROAD TO OCCIDENTAL (BOHEMIAN HIGHWAY), N OF FREESTONE.	IN DITCH ON N SIDE OF ROAD. A 1981 CLIFTON COLLECTION FROM "SALMON CREEK" AND A 1977 BUT REPORT LOCATION FROM "THE HEADWATERS OF SALMON CREEK NEAR FREESTONE" ALSO ATTRIBUTED TO THIS SITE.	IN A STAGNANT WATER DITCH ALONG HIGHWAY. ASSOCIATED WITH EQUISETUM AND RUBUS IN 1974.	POSSIBLY EXTIRPATED BY ROAD CONSTRUCTION/TELEGRAPH POLE WORK, DITCH MAINTENANCE.	FEW PLANTS IN 1974; ALSO SEEN IN 1975 & 1976. SITE VISITED, BUT PLANTS NOT SEEN IN 8/79. PLANTS SEEN IN 1981 BY CLIFTON, BUT UNCLEAR WHERE. GUGGOLZ & GUGGOLZ SEARCHED SITE & SURR AREA IN 1998 & 2000 AND FOUND NO PLANTS; HABITAT DEGRADED.
Rana draytonii	California red-legged frog	Amphibians	specific area	Presumed Extant	Natural/Native occurrence	Excellent	Threatened	None	G2G3	S2S3		SSC	IUCN_VU	ALONG UNNAMED DRAINAGE ON N SIDE OF ESTERO AMERICANO, 1.2-1.6 MI SE OF HWY 1 AT BODEGA HWY & 2.0 MI W OF VALLEY FORD.	MAPPED TO PROVIDED DETECTION SITES: "POND 1" AT (38.32517, -122.96217), IN SEEP TO S, AND IN THE CREEK BELOW.	PRIVATE LAND UNDER EASEMENT, USED FOR CATTLE GRAZING. BULLFROGS NOT FOUND IN THIS DRAINAGE DURING SURVEY, BUT WERE FOUND NEARBY. PROPERTY PROVIDED BREEDING AND ESTIVATION HABITAT.	OVERGRAZING, BULLFROG COLONIZATION (2014).	1 JUVENILE OBSERVED ON 15 APR; 4 ADULTS & 2 JUVENILES FOUND IN POND, 1 ADULT IN ADJACENT SEEP, 2 UNIDENTIFIED FROGS & 3 RED LEGGED FROG TADPOLES IN THE CREEK BELOW ON 23 JUN 2014.
Rana draytonii	California red-legged frog	Amphibians	specific area	Presumed Extant	Natural/Native occurrence	Good	Threatened	None	G2G3	S2S3		SSC	IUCN_VU	W SIDE OF NOLAN CREEK ABOUT 0.4 MILES SE OF JOY RD AT BURL LN AND 1.1 MILES N OF BODEGA HWY AT JOY RD, NE OF BODEGA.	MAPPED TO PROVIDED COORDINATES. SOUTH POLYGON REPRESENTS DETECTION LOCATION, NORTH POLYGON REPRESENTS RELOCATION SITE.	OBSERVED IN WETTED DITCH CONNECTED TO EPHEMERAL, SPRING-FED DRAINAGE EMPTYING INTO NOLAN CREEK, TRIBUTARY TO SALMON CREEK. SURROUNDING AREA USED FOR SHEEP RANCHING, RURAL RESIDENTIAL. DISTURBANCE FROM HABITAT ENHANCEMENT/ROAD CONSTRUCTION.	DISTURBANCE FROM VEGETATION REMOVAL AND ROAD CONSTRUCTION.	1 ADULT OBSERVED DURING ROAD CONSTRUCTION ON 28 SEP 2011 AND WAS RELOCATED TO A NEARBY PERENNIAL POND.
Emys marmorata	western pond turtle	Reptiles	80 meters	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G3G4	S3		SSC	BLM_S; IUCN_VU; USFS_S	EBABIAS CREEK AT CROSSING OF HIGHWAY 1, ON NW SIDE OF THE TOWN OF VALLEY FORD, NE OF BODEGA BAY.	MAPPED TO PROVIDED COORDINATES.	PERENNIAL PLUNGE POOL AT OUTLET OF CULVERT BENEATH HIGHWAY 1 CROSSING OF EBABIAS CREEK. SURROUNDING LAND USE WAS DAIRY CATTLE GRAZING. DISTURBANCE FROM VEHICLE TRAFFIC ON HWY 1.		4 ADULTS OBSERVED BASKING ON A GRASSY BANK ON 17 JUN 2008.
Emys marmorata	western pond turtle	Reptiles	80 meters	Presumed Extant	Natural/Native occurrence	Unknown	None	None	G3G4	S3		SSC	BLM_S; IUCN_VU; USFS_S	POND IN UNNAMED DRAINAGE, ABOUT 1.8 MILES NW OF CARROLL RD AT VALLEY FORD RD & 2.1 MILES NE OF THE TOWN OF VALLEY FORD.	MAPPED TO LOCATION PROVIDED FOR "POND B."	RED-LEGGED FROG AND BULLFROGS ALSO FOUND ON PROPERTY.	BULLFROGS.	1 ADULT AND 2 OR MORE HATCHLINGS OBSERVED ON 26 MAY 1995.
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	Fish	80 meters	Presumed Extant	Natural/Native occurrence	Good	Endangered	Endangered	G4	S2?			AFS_EN	NOLAN CREEK, UPSTREAM (NE) OF THURSTON CREEK AND DOWNSTREAM (S) OF JOY RD, ABOUT 0.9 MILES NE OF BODEGA.	MAPPED TO COORDINATES GIVEN FOR 2011 DETECTION.	ROCKY PERENNIAL STREAM DOMINATED BY COBBLE & GRAVEL. WILLOW RIPARIAN. STREAM FENCED AGAINST GRAZING CATTLE (2011).		25 CAUGHT DURING SEINING SURVEYS ON 16 NOV 2011.
Rana boylii	foothill yellow-legged frog	Amphibians	80 meters	Presumed Extant	Natural/Native occurrence	Good	None	Candidate Threatened	G3	S3		SSC	BLM_S; IUCN_NT; USFS_S	NOLAN CREEK, UPSTREAM (NE) OF THURSTON CREEK AND DOWNSTREAM (S) OF JOY RD, ABOUT 0.9 MILES NE OF BODEGA.	MAPPED TO PROVIDED COORDINATES.	ROCKY PERENNIAL STREAM, MAINLY COBBLE AND GRAVEL SUBSTRATE WITH ALDER AND WILLOW-DOMINATED CANOPY. AREA GRAZED, BUT FENCING EXCLUDED CATTLE FROM STREAM. COHO, STEELHEAD, AND CA FRESHWATER SHRIMP ALSO FOUND.		2 METAMORPHS OBSERVED ON 16 NOV 2011 DURING SEINING SURVEYS FOR COHO SALMON.
Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	Fish	80 meters	Presumed Extant	Natural/Native occurrence	Good	Threatened	None	G5T2T3Q	S2S3			AFS_TH	NOLAN CREEK, UPSTREAM (NE) OF THURSTON CREEK AND DOWNSTREAM (S) OF JOY RD, ABOUT 0.9 MILES NE OF BODEGA.	EXACT LOCATIONS OF 2003 DETECTIONS UNKNOWN. MAPPED TO COORDINATES GIVEN FOR 2011 DETECTION.	ROCKY PERENNIAL STREAM DOMINATED BY COBBLE & GRAVEL. WILLOW RIPARIAN. STREAM FENCED AGAINST GRAZING CATTLE (2011).		DETECTED 5-6 AUG 2003. 34 CAUGHT DURING SEINING SURVEY FOR COHO ON 16 NOV 2011.
Syncaris pacifica	California freshwater shrimp	Crustaceans	80 meters	Presumed Extant	Natural/Native occurrence	Good	Endangered	Endangered	G2	S2			IUCN_EN	NOLAN CREEK, UPSTREAM (NE) OF THURSTON CREEK AND DOWNSTREAM (S) OF JOY RD, ABOUT 0.9 MILES NE OF BODEGA.	MAPPED TO PROVIDED COORDINATES.	ROCKY PERENNIAL STREAM, MAINLY COBBLE AND GRAVEL SUBSTRATE WITH ALDER AND WILLOW-DOMINATED CANOPY. AREA GRAZED, BUT FENCING EXCLUDED CATTLE FROM STREAM. COHO, STEELHEAD, & YELLOW-LEGGED FROG ALSO FOUND.		3 ADULTS OBSERVED ON 16 NOV 2011 DURING SEINING SURVEY FOR COHO SALMON.

Rana draytonii	California red-legged frog	Amphibians	80 meters	Presumed Extant	Natural/Native occurrence	Good	Threatened	None	G2G3	S2S3		SSC	IUCN_VU	SALMON CREEK, ABOUT 0.1 MILES SE OF BODEGA HWY AT BODEGA LN IN BODEGA.	2010 DETECTION BETWEEN BODEGA HWY & NOLAN CREEK, EXACT LOCATION UNKNOWN. MAPPED TO COORDINATES GIVEN FOR 2016 DETECTION.	2010: PERENNIAL STREAM DOMINATED BY WILLOW; DISTURBANCE FROM CATTLE XING. 2016: INCISED STREAM ADJACENT TO 3' DEEP POOL W/MUCH LWD, SANDY SILT BOTTOM, MUD BANKS & GRAVEL BAR; PRESUMED BREEDING HABITAT IN STOCK PONDS ON BOTH SIDES OF CREEK.	CATTLE (2010). PROBABLE PRESENCE OF BULLFROGS (2016).	3 JUVENILES OBSERVED ON 30 AUG 2010. 1 JUVENILE OBSERVED ON 4 SEP 2016. A FROG HAD BEEN SPOTTED THE DAY BEFORE AT SAME SITE BUT NOT IDED; POSSIBLY THE SAME INDIVIDUAL.
Lasthenia conjugens	Contra Costa goldfields	Dicots	80 meters	Presumed Extant	Natural/Native occurrence	Excellent	Endangered	None	G1	S1	1B.1		SB_UCBBG	ALONG HIGHWAY 1, 0.35 MILE SOUTH OF AMERICANO CREEK, NORTHWEST MARIN COUNTY, NEAR SONOMA COUNTY BORDER.	MAPPED WITHIN THE WEST HALF OF THE SW 1/4 OF SECTION 36.	SEASONAL (CREEKSIDE) WETLAND WITH FLAT TOPOGRAPHY. AT TIME OF VISIT LASTHENIA AND PLAGIOBOTHRYS DOMINANT.	SHEEP PASTURE, ALTHOUGH SHEEP DO NOT APPEAR TO IMPACT THE LASTHENIA AND MAY MITIGATE GROWTH OF NON-NATIVE WEEDY GRASSES.	THIS POPULATION WAS INITIALLY DISCOVERED BY BETTY GUGGOLZ, AND LATER REDISCOVERED (IN 2002) BY RANDY MORGAN. 1000S OF PLANTS SEEN BY SMITH IN 2003, SURVEYED FROM ROADSIDE RIGHT-OF-WAY. 100S OF PLANTS SEEN IN 2011. SEEN IN 2013.
Emys marmorata	western pond turtle	Reptiles	80 meters	Presumed Extant	Natural/Native occurrence	Good	None	None	G3G4	S3		SSC	BLM_S; IUCN_VU; USFS_S	SALMON CREEK, JUST EAST OF BODEGA.		HABITAT CONSISTS OF A COASTAL STREAM CONTAINING POOLS UP TO 5' DEEP, RIFFLES WITH A GRAVEL/COBBLE SUBSTRATE, AND AN INSTREAM SHELTER OF ROOTWADS, LEDGES, AND LARGE WOODY DEBRIS; MATURE CANOPY OF RED ALDER, ABOUT 75% SHADE.	THREATENED BY EXCESSIVE SEDIMENT, DECREASING CHANNEL DEPTH; LOW SUMMER FLOWS DUE TO DIVERSIONS; EROSION FROM FARMLANDS.	1 ADULT MALE (~8" CARAPACE LENGTH) OBSERVED BASKING ON 12 NOV 2005.
Usnea longissima	Methuselah's beard lichen	Lichens	80 meters	Presumed Extant	Natural/Native occurrence	Fair	None	None	G4	S4	4.2		BLM_S	COLEMAN VALLEY RD, 9.6 KM E OF HWY 1. EBABIAS CREEK AND VICINITY,	MAPPED BASED ON UTM COORDINATES PROVIDED BY WRIGHT.	IN 2004, SEEN IN LARGE FRAXINUS, AT MARGIN OF MEADOW AND NORTH COAST CONIFEROUS FOREST.		UNKNOWN NUMBER OF LICHENS OBSERVED BY WRIGHT. ALSO SEEN HERE IN 2004 BY PRESTON.
Emys marmorata	western pond turtle	Reptiles	80 meters	Presumed Extant	Natural/Native occurrence	Good	None	None	G3G4	S3		SSC	BLM_S; IUCN_VU; USFS_S	TRIBUTARY TO ESTERO AMERICANO, 2 MILES NNE OF VALLEY FORD.		HABITAT CONSISTS OF THE CREEK, FARM POND, AND SURROUNDING FALLOW GRASSLAND/PASTURE.	THREATENED BY UPLAND CONVERSION TO VINEYARDS.	1 INDIVIDUAL OBSERVED ON 12 MAR 2001. MANY INDIVIDUALS OBSERVED BY KJELDSEN IN 2002. PRESTON VISITED THIS SITE IN 2004 AND FOUND NO USNEA LONGISSIMA, BUT DID SEE RAMALINA MENZIESII. POSSIBLE MIS-IDENTIFICATION? NEEDS ADDITIONAL SURVEYS.
Usnea longissima	Methuselah's beard lichen	Lichens	80 meters	Presumed Extant	Natural/Native occurrence	Fair	None	None	G4	S4	4.2		BLM_S	2 MILES WEST OF THE TOWN OF OCCIDENTAL ALONG COLEMAN CALLEY ROAD.	ON EAST SIDE OF ROAD ON WEST SIDE OF HAIRPIN TURN. JUST WEST OF COLEMAN VALLEY CREEK.	IN SECOND GROWTH REDWOOD/FIR FOREST.	ALONGSIDE COLEMAN VALLEY ROAD. SURROUNDING AREA IS OPEN SPACE TIMBERLANDS.	
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Birds	80 meters	Presumed Extant	Natural/Native occurrence	Unknown	Threatened	Endangered	G5T2T3	S1			BLM_S; NABCI_RWL; USFS_S; USFWS_BCC	0.7 MILE NW OF SALMON CREEK ROAD AT TANNERY CREEK ROAD, OCCIDENTAL.	DETECTED AT HOUSE ALONG THE EAST SIDE OF AN UNNAMED STREAM BETWEEN FAY CREEK AND TANNERY CREEK. MAPPED TO PROVIDED COORDINATES.	HABITAT GENERALLY CONSISTS OF ROLLING GRASSLAND HILLS WITH STEEP WOODED CANYONS. SEVERAL GOOD RIPARIAN CORRIDORS ALONG FAY, TANNERY, & SALMON CREEKS IN IMMEDIATE VICINITY.	THREATENED BY COLLISIONS WITH UN-MARKED WINDOWS.	1 ADULT COLLIDED WITH THE WINDOW OF A HOUSE AND DIED ON 6 JUL 1996. BIRD GIVEN TO DFG (BILL COX). SPECIMEN SAVED, APPEARS TO HAVE A BROOD PATCH, AND WILL LIKELY BE DEPOSITED IN A MUSEUM COLLECTION.

Dirca occidentalis	western leatherwood	Dicots	80 meters	Presumed Extant	Natural/Native occurrence	Good	None	None	G2	S2	1B.2		SB_RSABG	SALMON CREEK ROAD, 2.25 MILES WEST OF JUNCTION WITH BODEGA HIGHWAY IN THE VILLAGE OF BODEGA.	ON NW-FACING SLOPE ON NORTH (EAST) SIDE OF ROAD (UPSLOPE, OPPOSITE SIDE OF ROAD FROM SALMON CREEK); LOWERMOST 2 PLANTS WITHIN ~5 M OF ROAD SURFACE (SITE OF WARNER'S COORDINATES MAPPED BY CNDDB), REMAINDER UPSLOPE, MOSTLY IN FOREST.	NW-FACING. PSEUDOTSUGA MENZIESII-UMBELLULARIA CALIFORNICA ASSOCIATION, ADJACENT TO SMALL PATCH OF HOLODISCUS DISCOLOR-CORYLUS CORNUTA-BACCHARIS PILULARIS SHRUBLAND & COASTAL GRASSLAND. SALIX LASIOLEPIS-ALNUS RUBRA RIPARIAN WOODLAND UPSLOPE.	REPORTED DISTURBANCES (NOT REPORTED AS THREATS): MYOSOTIS LATIFOLIA IN ADJACENT FOREST, SOME HUMAN FOOTPATHS NEAR POP.	~15 INDIVIDUALS OBSERVED IN 2001: 3 NEAR ROAD, ~12 UPSLOPE. UNKNOWN # IN 2010. 30 PLANTS IN 2011; POPULATION SCATTERED ACROSS ~300 SQ M; TRUE # UNKNOWN (ROOT SPROUTING & POTENTIALLY CLONAL GROUPS). NEED MORE DATA TO MAP TRUE EXTENT OF POP.
Syncaris pacifica	California freshwater shrimp	Crustaceans	80 meters	Presumed Extant	Natural/Native occurrence	Fair	Endangered	Endangered	G2	S2			IUCN_EN	EBABIAS CREEK, TRIBUTARY TO ESTERO AMERICANO, EAST SIDE OF HIGHWAY 1, 1.6 MILES NORTH OF VALLEY FORD.	THE SHRIMP POPULATION IN THE WILLOW RIPARIAN AREA WAS MUCH LOWER DUE TO LACK OF AN UNDERCUT BANK THAT PROVIDES A WINTER REFUGIUM. THE LOWER STREAM WHERE SHRIMP WERE FOUND SEEMED TO BE RECOVERING AND RIPARIAN COVER IMPROVING.	HABITAT CONSISTS OF A DEEPLY-INCISED (4' DEEP) POOL WITHIN THE STREAM CHANNEL, WITH VERTICAL BANKS AND OVERHANGING GRASSES; POOL COVERED BY DUCKWEED (VERY ATYPICAL HABITAT). A SMALL NUMBER OF STEELHEAD TROUT PRESENT.	THREATENED BY SEVERE CREEK DISTURBANCE IN THE WATERSHED FROM HISTORIC DAIRY USE.	120 INDIVIDUALS OBSERVED ON 30 NOV 2006.
Taxidea taxus	American badger	Mammals	80 meters	Presumed Extant	Natural/Native occurrence	Good	None	None	G5	S3		SSC	IUCN_LC	0.4 MI ENE BODEGA HWY AT SR 1, JUST S OF BODEGA.	MAPPED TO PROVIDED COORDINATES.	GRASSY HILLTOP FORMERLY GRAZED BY CATTLE. DARK LOAMY SOIL. MIXTURE OF NATIVE PERENNIAL AND INTRODUCED ANNUAL GRASSES. ABUNDANT PREY BASE OF POCKET GOPHERS AND CALIFORNIA VOLES.	INTRODUCED GORSE MAY EVENTUALLY COVER ALL OPEN SPACE.	THREE SEPARATE CLUSTERS OF BADGER BURROWS AROUND THE EDGES OF THE HILL, WITH 6-10 OPENINGS PER CLUSTER. EACH CLUSTER WITHIN 50 FT OF COORDINATES. BASED ON RAINFALL, AT LEAST 2 BURROWS SHOW ACTIVITY WITHIN 24 HOURS OF 25 FEB 2008.
Fritillaria liliacea	fragrant fritillary	Monocots	80 meters	Presumed Extant	Natural/Native occurrence	Good	None	None	G2	S2	1B.2		USFS_S	NORTH END OF ACREAGE LANE, SOUTHEAST OF CAMP MEEKER.	SOUTH SIDE OF ACREAGE LANE JUST EAST OF STEPPS ROAD; BETWEEN OCCIDENTAL AND CAMP MEEKER, EAST OF THE BOHEMIAN HIGHWAY. WITHIN THE NE 1/4 OF THE SE 1/4 OF SECTION 27.	IN SERPENTINE GRASSLAND WITHIN CHAPARRAL. ASSOCIATED WITH DANTHONIA CALIFORNICA, CHLOROGALUM POMERIDIANUM, CALOCHORTUS AMABILIS, DICHELOSTEMMA PULCHELLA, TRITELIA LAXA, PLANTAGO LANCEOLATA, PICKERINGIA MONTANA, AND ADENOSTOMA FASCICULATUM.	AREA SURROUNDED BY HOMES, FRENCH BROOM INVADING (1986). IN 2012, OWNER REMOVED MUCH OF THE BROOM & ACACIA.	500 PLANTS IN 1986, UNKNOWN HOW MANY SEEN IN 1994, 97 FOUND IN 1998. ABOUT 1000 PLANTS (57 CAPSULES) COUNTED IN 2005. ~1000 PLANTS OBSERVED IN 2013. 1933 COLLECTION BY ARMSTRONG FROM "CAMP MEEKER" ATTRIBUTED TO THIS SITE.
Trifolium amoenum	two-fork clover	Dicots	80 meters	Presumed Extant	Natural/Native occurrence	Good	Endangered	None	G1	S1	1B.1		SB_RSABG; SB_USDA	NORTH OF BODEGA, 1.5 KM (0.9 MILE) SE OF SUGARLOAF.	OFF OF FITZPATRICK ROAD, 0.6 MILE SOUTH OF JUNCTION WITH DOCS RANCH ROAD.	ON EDGE OF DIRT ROAD IN DISTURBED GRASSLAND WITH SOME NATIVES. ASSOCIATES INCLUDE AVENA BARBATA, BROMUS SPP, VULPIA SPP, DANTHONIA CALIFORNICA, LINUM, CARDUUS PYCNOCEPHALUS, AND AIRA CARYOPHYLLEA WITH SCATTERED DOUGLAS-FIR AND COYOTE BUSH.	OCCURS ON VACANT RURAL RESIDENTIAL HOMESITE WHICH IS PRESENTLY FOR SALE. SURROUNDING AREA IS LIGHT RURAL RESIDENTIAL.	ONLY ONE PLANT OBSERVED IN 1993. LOCATED IN AREA WHERE ROAD WAS GRADED AT ONE TIME (WITHIN 5 YEARS); SEED MAY HAVE GERMINATED DUE TO THIS DISTURBANCE. UNDOUBTEDLY THERE ARE MORE SEEDS IN THE SEEDBANK.

Dirca occidentalis	western leatherwood	Dicots	specific area	Presumed Extant	Natural/Native occurrence	Good	None	None	G2	S2	1B.2		SB_RSABG	SALMON CREEK ROAD, BETWEEN 0.3 AND 0.4 MILE WEST OF JUNCTION WITH FITZPATRICK LANE.	NORTH SIDE OF SALMON CREEK ROAD. MAPPED TO INCLUDE MAPPED AREA ON A 1993 MAP AND 2011 WARNER COORDINATES.	PSEUDOTSUGA MENZIESII-UMBELLULARIA CALIFORNICA ASSOCIATION, UPSLOPE (ACROSS ROAD) FROM SALIX LASIOLEPIS-ALNUS RUBRA RIPARIAN WOODLAND. ASSOCIATED WITH HOLODISCUS DISCOLOR, CORYLUS CORNUTA, LONICERA HISPIDULA, SATUREJA DOUGLASII, ETC.	POSSIBLY THREATENED BY LOGGING, OVERGRAZING, OR HOME CONSTRUCTION (1993).	FEWER THAN 50 PLANTS OBSERVED IN 1982, 35 IN 1993, APPROXIMATELY 35 OBSERVED IN 1996, 25 PLANTS IN 2011. INCLUDES FORMER OCCURRENCE #33. DISTURBANCES INCLUDE SOME HUMAN FOOTPATHS AND GAME TRAILS, AND ROADSIDE WEEDS.

X = Present on the Quadrangle		ESA ANADROMOUS FISH (E) = Endangered, (T) = Threatened												ESA ANADROMOUS FISH CRITICAL HABITAT										ESA MARINE INVERTEBRATES		ESA MARINE INVERT. CRITICAL HABITAT	ESA SEA TURTLES				ESA WHALES	ESA PINNIPEDS	ESA PINNIPEDS CRITICAL HABITAT	ESSENTIAL FISH HABITAT				MMPA SPECIES	
		COHO		CHINOOK			STEELHEAD					Eulachon (T)	Southern DPS Green Sturgeon (T)	COHO		CHINOOK			STEELHEAD					Eulachon	Southern DPS Green Sturgeon	Black Abalone (E)	White Abalone (E)	Black Abalone	East Pacific Green Sea Turtle (T)	Olive Ridley Sea Turtle (T/E)	Leatherback Sea Turtle (E)	North Pacific Loggerhead Sea Turtle (E)	Whales (see list below)	Guadalupe Fur Seal (T)	Steller Sea Lion	SALMON		Groundfish	Coastal Pelagic	Highly Migratory Species	MMPA Cetaceans (see "MMPA Species" tab for list)	MMPA Pinnipeds (see "MMPA Species" tab for list)
Quad Name	Quad Number	SONCC (T)	CCC (E)	CC (T)	CVSR (T)	SRWR (E)	NC (T)	CCC (T)	SCCC (T)	SC (E)	CCV (T)			SONCC	CCC	CC	CVSR	SRWR	NC	CCC	SCCC	SC	CCV													Coho	Chinook					
Camp Meeker	38122-D8		X	X				X							X	X				X														X	X					

Species List - Intersection of USGS Topographic Quadrangles with NOAA Fisheries ESA Listed Species, Critical Habitat, Essential Fish Habitat, and MMPA Species Data

November 2016

Data Sources

Quads - 1:24,000 USGS Topograph http://viewer.nationalmap.gov/basic/

ESU / DPS - Boundary files for spe http://www.westcoast.fisheries.noaa.gov/maps_data/species_population_boundaries.html

Critical Habitat - spatial or narrath http://www.westcoast.fisheries.noaa.gov/maps_data/endangered_species_act_critical_habitat.html

- SONCC Coho
- CC Coho
- NC Steelhead
- CCC Steelhead
- SCCC Steelhead
- SC Steelhead
- CCV Steelhead
- CC Chinook
- CVSR Chinook
- SRWR Chinook
- Green Sturgeon
- Black Abalone
- Leatherback Sea Turtle
- Eulachon

Distribution

Coho Salmon	http://www.calfish.org/
Steelhead	http://www.calfish.org/
Chinook Salmon	http://www.calfish.org/
Cetaceans	http://marinecadastre.gov/ : http://www.nmfs.noaa.gov/pr/species/mammals/
Green Sea Turtle	http://www.nmfs.noaa.gov/pr/species/turtles/green.html
Leatherback Sea Turtle / Critical Habitat	http://www.nmfs.noaa.gov/pr/species/turtles/leatherback.html
North Pacific DPS Loggerhead Sea Turtle	http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.html
Olive Ridley Sea Turtle	http://www.nmfs.noaa.gov/pr/species/turtles/oliveridley.html
Black Abalone	http://www.fisheries.noaa.gov/pr/species/invertebrates/abalone/black-abalone.html
White Abalone	http://www.fisheries.noaa.gov/pr/species/invertebrates/abalone/white-abalone.html
Eulachon	http://www.fisheries.noaa.gov/pr/species/fish/eulachon.html
Green Sturgeon	http://www.fisheries.noaa.gov/pr/species/fish/green-sturgeon.html
Steller Sea Lion	http://www.fisheries.noaa.gov/pr/species/mammals/sealions/steller-sea-lion.html
Guadalupe Fur Seal	http://www.fisheries.noaa.gov/pr/species/mammals/seals/guadalupe-fur-seal.html
Other Pinnipeds	http://www.nmfs.noaa.gov/pr/species/mammals/

Essential Fish Habitat	http://www.westcoast.fisheries.noaa.gov/habitat/fish_habitat/efh_consultations_go.html
Salmon	http://www.westcoast.fisheries.noaa.gov/habitat/fish_habitat/efh_consultations_go.html
Groundfish	http://www.westcoast.fisheries.noaa.gov/habitat/fish_habitat/efh_consultations_go.html
Coastal Pelagics	http://www.westcoast.fisheries.noaa.gov/habitat/fish_habitat/efh_consultations_go.html
Highly Migratory Species	http://www.westcoast.fisheries.noaa.gov/habitat/fish_habitat/efh_consultations_go.html

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: July 30, 2019
Consultation Code: 08ESMF00-2019-SLI-2616
Event Code: 08ESMF00-2019-E-08334
Project Name: Freestone Flat Road Bridge Replacement Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2019-SLI-2616

Event Code: 08ESMF00-2019-E-08334

Project Name: Freestone Flat Road Bridge Replacement Project

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: Sonoma County Public Works Department (County), in cooperation with the Federal Highway Administration (FHWA) and the California Department of Transportation (Caltrans), proposes to replace the Freestone Flat Road Bridge at Salmon Creek (Bridge No. 20C0440). The primary objective of this project is to replace the existing functionally obsolete (narrow) bridge with a new wider structure.

The County intends to construct a new two-lane bridge to replace the narrow existing bridge. The total length of the project is approximately 620 feet, which includes approximately 515 feet of roadway work beyond the bridge abutments. Roadway work consists of shifting the roadway alignment slightly downstream and reconstructing the roadway approaches leading up to the bridge to accommodate traffic staging/ handling, and provide for a 40 mph design speed with lane and shoulder widths that meet the County's minimum design standard. The California Department of Transportation (Caltrans), on behalf of the Federal Highway Administration (FHWA), is providing project oversight. All roadway approach work is expected to be eligible for federal funding pending approval by Caltrans/FHWA.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/38.379031843152035N122.9231943269603W

Counties: Sonoma, CA

Endangered Species Act Species

There is a total of 14 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl *Strix occidentalis caurina* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **proposed** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Green Sea Turtle *Chelonia mydas* Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Insects

NAME	STATUS
Myrtle's Silverspot Butterfly *Speyeria zerene myrtleae* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6929	Endangered
San Bruno Elfin Butterfly *Callophrys mossii bayensis* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3394	Endangered

Crustaceans

NAME	STATUS
California Freshwater Shrimp *Syncaris pacifica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7903	Endangered

Flowering Plants

NAME	STATUS
Baker's Larkspur *Delphinium bakeri* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5031	Endangered
Pennell's Bird's-beak *Cordylanthus tenuis ssp. capillaris* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3175	Endangered
Sebastopol Meadowfoam *Limnanthes vinculans* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/404	Endangered
Showy Indian Clover *Trifolium amoenum* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6459	Endangered
Sonoma Alopecurus *Alopecurus aequalis var. sonomensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/557	Endangered
Yellow Larkspur *Delphinium luteum* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3578	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

APPENDIX C – CONSTRUCTION NOISE ASSESSMENT

FREESTONE FLAT ROAD BRIDGE REPLACEMENT PROJECT CONSTRUCTION NOISE AND VIBRATION ASSESSMENT SONOMA COUNTY, CALIFORNIA

August 8, 2019

♦ ♦ ♦

Prepared for:

Lisa Hulette
Senior Environmental Specialist
Sonoma County Natural Resources Section
2550 Ventura Avenue
Santa Rosa, CA 95403-2829

Prepared by:

Torrey Dion
Michael S. Thill

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
1 Willowbrook Court, Suite 120
Petaluma, CA 94954
(707) 794-0400

Project: 18-079

Introduction and Findings Summary

This report presents the results of the construction noise and vibration assessment completed for the Freestone Flat Road Bridge Replacement Project in Sonoma County, California. The proposed project will replace the existing bridge with a new, two-lane, single-span bridge.

The fundamentals of environmental noise and vibration are presented first for those who may not be familiar with acoustical terminology or concepts. The report then provides an evaluation of noise and vibration levels resulting from project construction activities. Measures to reduce construction noise levels are recommended. Based on the analyses presented herein, project construction activities would result in short-term periods of elevated noise levels and ground vibration at receptors in the project vicinity. With the incorporation of the noise reduction measures included at the conclusion of the noise analysis, no construction noise impacts have been identified for this project. Also, this analysis found that vibration generated from construction activities would not exceed the 0.3 in/sec Peak Particle Velocity threshold.

SETTING

Fundamentals of Environmental Noise

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its *pitch* or its *loudness*. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A *decibel (dB)* is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 1.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level (dBA).* This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This *energy-equivalent sound/noise descriptor* is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the *sound level meter*. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the sensitivity to noise increases during the evening and at night -- because excessive noise interferes with the ability to sleep -- 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The *Community Noise Equivalent Level* (*CNEL*) is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 p.m. - 10:00 p.m.) and a 10 dB addition to nocturnal (10:00 p.m. - 7:00 a.m.) noise levels. The *Day/Night Average Sound Level* (L_{dn}) is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

Fundamentals of Groundborne Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One method is the Peak Particle Velocity (PPV). The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. In this report, a PPV descriptor with units of mm/sec or in/sec is used to evaluate construction generated vibration for building damage and human complaints. Table 3 displays the reactions of people and the effects on buildings that continuous vibration levels produce.

The annoyance levels shown in Table 3 should be interpreted with care since vibration may be found to be annoying at much lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of vibratory compaction equipment typically generates the highest construction related groundborne vibration levels. Because of the impulsive nature of such activities, the use of the PPV descriptor has been routinely used to measure and assess groundborne vibration and almost exclusively to assess the potential of vibration to induce structural damage and the degree of annoyance for humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life, are evaluated against different vibration limits. Studies have shown that the threshold of perception for average persons is in the range of 0.008 to 0.012 in/sec PPV. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Structural damage can be classified as cosmetic only, such as minor cracking of building elements, or may threaten the integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to the building. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

TABLE 1 Definition of Acoustical Terms Used in this Report

Term	Definition
Decibel, dB	A unit describing, the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20 micro Pascals.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e. g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 p.m. and 7:00 a.m.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 p.m.to 10:00 p.m. and after addition of 10 decibels to sound levels measured in the night between 10:00 p.m. and 7:00 a.m.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control, Harris, 1998.

TABLE 2 Typical Noise Levels in the Environment

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110 dBA	Rock band
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Quiet urban nighttime	40 dBA	Theater, large conference room
Quiet suburban nighttime		
	30 dBA	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20 dBA	
		Broadcast/recording studio
	10 dBA	
	0 dBA	

Source: Technical Noise Supplement (TeNS), California Department of Transportation, September 2013.

TABLE 3 Reactions of People and Damage to Buildings from Continuous or Frequent Intermittent Vibration Levels

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.01	Barely perceptible	No effect
0.04	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structure
0.08	Distinctly perceptible to strongly perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.1	Strongly perceptible	Virtually no risk of damage to normal buildings
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential dwellings such as plastered walls or ceilings
0.5	Severe - Vibrations considered unpleasant	Threshold at which there is a risk of damage to newer residential structures

Source: Transportation and Construction Vibration Guidance Manual, California Department of Transportation, September 2013.

Project Description

The proposed project will replace the existing bridge with a new, single-span, bridge on Freestone Flat Road, south of the existing bridge. The new bridge will cross Salmon Creek parallel to the existing bridge. Once the new bridge is constructed, the old bridge would be demolished. This method of bridge construction will ensure local traffic is not impacted. The existing bridge is one lane wide and is considered structurally deficient. The new bridge is expected to be a cast-in-place prestressed concrete girder bridge constructed on falsework across the creek channel.

Construction is expected to take no more than six months. The seasons for construction could begin in May and end in October.
Construction is expected to occur in 5 distinct stages. Theses stages are summarized as follows:

Stage 1: Stage 1 is expected to consist of the construction of the bridge. Excavation of earth material will take place as well as the installation of cast-in-drilled-hole piling. Concrete girder stems will be used to form the bridge, where the concrete platform will be cast in sequence.

Stage 2: This stage will consist of grading the new abutment areas as well as installing concrete bridge approach slabs. Metal beam guard rails and crash guards will also be installed.

Stage 3: Road preparation will take place to ready the new bridge for traffic. The existing asphalt will be removed and a new road base and asphalt surface will be placed on the roadway.

Stage 4: The existing bridge will be demolished. Final asphalt paving and striping along with the installation of remaining hardware will be completed.

Stage 5: Construction equipment will be removed from the site and heavy construction will be complete. Finishing project duties will take place such as the sealing of exposed slopes and the installation of roadside hardware.

Anticipated construction phasing and equipment are as follows:

Stage 1:

Bridge Abutments

1. Excavator or Backhoe
2. Tractor Trailer
3. Drilling Equipment
4. Crane
5. Concrete Pump/Boom truck
6. Concrete Mixing Trucks
7. Loader
8. Roller/Sheep's Foot
9. Plate Tamper/Wacker/Ram
10. Pick-Up Trucks
11. Water Trucks
12. Dump Trucks
13. Street Sweepers 14. Generators
15. Air Compressors
16. Telescopic Forklift
17. Cutting torch, circular saw, drill, grinder

Temporary Works

1. Crane
2. Loader
3. Engine Powered Boom Lift
4. Roller/Sheep's Foot
5. Plate Tamper/Wacker/Ram
6. Generators
7. Air Compressors
8. Pick-Up Trucks
9. Water Trucks
10. Street Sweepers
11. Tractor Trailer
12. Telescopic Forklift
13. Cutting torch, circular saw, drill, grinder

Concrete Bridge Construction

1. Crane
2. Generators
3. Air Compressors

4. Concrete Pumps/Boom Truck
5. Engine Powered Boom Lift
6. Roller/Sheep's Foot
7. Plate Tamper/Wacker/Ram
8. Pick-Up Trucks
9. Water Trucks
10. Street Sweepers
11. Excavator or Backhoe
12. Loader
13. Tractor Trailer
14. Telescopic Forklift
15. Cutting torch, circular saw, drill, grinder

Stage 2

Approach Roadways & Tie-Ins

1. Loader
2. Profile Grinder
3. Paver
4. Dump Trucks
5. Roller
6. Plate Tamper/Wacker/Ram
7. Street Sweepers
8. Generators
9. Air Compressors
10. Pick-Up Trucks
11. Water Trucks
12. Tractor Trailer
13. Telescopic Forklift
14. Cutting torch, circular saw, drill, grinder

Stage 3

Approach Tie-Ins

1. Excavator or Backhoe
2. Loader
3. Paver
4. Dump Trucks
5. Roller
6. Plate Tamper/Wacker/Ram
7. Street Sweepers 8. Generators
9. Air Compressors
10. Pick-Up Trucks
11. Water Trucks
12. Tractor Trailer

13. Telescopic Forklift
14. Cutting torch, circular saw, drill, grinder

Stage 4

Bridge Demolition and New Bridge Wingwall

1. Excavator or Backhoe
2. Excavator mounted jackhammer
3. Tractor Trailer
4. Crane
5. Concrete Pump/Boom truck
6. Concrete Mixing Trucks
7. Loader
8. Roller/Sheep's Foot
9. Plate Tamper/Wacker/Ram
10. Pick-Up Trucks
11. Water Trucks
12. Dump Trucks
13. Street Sweepers 14. Generators
15. Air Compressors
16. Paver
17. Telescopic Forklift
18. Cutting torch, circular saw, drill, grinder

Stage 5

Project Completion

1. Thermoplastic Applicator
2. Auger for Wood Sign Post
3. Street Sweeper
4. Water Truck
5. Pick-up Trucks
6. Dump Trucks
7. Telescopic Forklift
8. Cutting torch, circular saw, drill, grinder

Construction Noise Assessment

Regulatory Criteria

The County currently has no quantitative noise thresholds for construction noise, however, construction noise must be considered in the noise analysis in some cases, and is required for any construction activity that extends for more than one year. Although there is often little that can be done to reduce noise levels generated by construction equipment, this study recommends measures that should be considered in cases where sensitive receptors may be impacted.

Construction Noise Levels

Noise impacts generated by project-related construction activities would be a function of the noise levels generated by individual pieces of construction equipment, the type and amount of equipment operating at any given time, the timing and duration of construction activities, the proximity of nearby sensitive land uses, and the presence or lack of shielding at these sensitive land uses. Construction noise levels would vary on a day-to-day basis during each phase of construction depending on the specific task being completed. Each construction phase would require a different combination of construction equipment necessary to complete the task and differing usage factors for such equipment. Construction noise would primarily result from the operation of heavy construction equipment and the arrival and departure of heavy-duty trucks.

FHWA's Roadway Construction Noise Model (RCNM) was used to calculate the maximum and average noise levels anticipated during each phase of construction. This construction noise model includes representative sound levels for the most common types of construction equipment and the approximate usage factors of such equipment that were developed based on an extensive database of information gathered during the construction of the Central Artery/Tunnel Project in Boston, Massachusetts (CA/T Project or "Big Dig"). The usage factors represent the percentage of time that the equipment would be operating at full power. Vehicles and equipment anticipated during each phase of construction were input into RCNM to calculate noise levels at a reference distance of 50 feet. Levels calculated in RCNM represent an upper bound of possible construction noise. Construction noise levels would range 5-10 dBA below these upper bound levels.

All receptor measurements and projections were made from an assumed project site center as shown in Figure 1. For the nearest residence at a distance of about 220 feet from the bridge site center, a 30-foot site center from Freestone Flat Road would also be considered during stages 2 and 3. These stages incorporate the new road development associated with the project. Table 4 presents the construction noise levels calculated for each major construction phase of the project using RCNM. At distances greater than 100 feet, actual noise levels would be expected to be lower than Table 4 due to shielding and ground absorption. Stage 1 represents an average noise level from bridge abutments, temporary work, and bridge construction. Stage 2 represents construction of approach roadways and tie-ins, Stage 3 represents the construction of tie-ins, Stage 4 represents bridge demolition, and Stage 5 represents bridge completion. In some instances, maximum instantaneous noise levels are calculated to be slightly lower than hourly average noise levels. This occurs because the model reports the maximum instantaneous noise level generated by the loudest single piece of construction equipment, while alternatively, the model reports the hourly average noise levels resulting from the additive effect of multiple pieces of construction equipment operating simultaneously.

TABLE 4 Noise Levels by Construction Phase at Distances of Nearest Receptors

Construction Phase	Maximum Noise Level (L_{max}, dBA)				Hourly Average Noise Level ($L_{eq[h]}$, dBA)			
	30 ft.	220 ft.	250 ft.	500 ft.	30 ft.	220 ft.	250 ft.	500 ft.
Stage 1	N/A	71	70	64	N/A	74	74	68
Stage 2	88	71	70	64	91	74	73	67
Stage 3	88	71	70	64	92	74	73	67
Stage 4	N/A	76	75	69	N/A	76	75	69
Stage 5	N/A	71	70	64	N/A	72	71	65

Noise generated by construction equipment drops off at a rate of 6 dB per doubling of distance between the noise source and receptor. The potential for the highest noise levels received at any nearby residence will occur during the construction of the north approach road adjacent to the bordering northern residence. This construction activity is expected to occur during Stages 2 and 3. This residence exists as close as 30 feet from the center of proposed roadway construction on Freestone Flat Road as well as 220 feet from the bridge construction site center. At a distance of 30 feet from roadway construction, noise levels would be expected to reach up to 92 dBA L_{eq}. At a distance of 220 feet from bridge construction, noise levels would be expected to reach up to 76 dBA L_{eq}. Similar residential living spaces exist at distances of 250 to 600 feet away from the bridge project site center.

At 250 feet, noise levels at the nearby southern residence are calculated to be 71 to 75 L_{eq} however shielding provided by foliage and elevation changes would be expected to reduce these levels. All other nearby residential buildings exist at distances of 500 feet or greater. At these distances, construction noise would not be considered an impact. Although there is no County established threshold for construction noise, noise levels can be considered a nuisance to nearby residents, and measures to reduce the noise levels are proposed below.

Construction Noise Reduction Measures

To reduce the potential for noise impacts resulting from the construction of the project, the following measures should be implemented during all project construction activities:

- The contractor should prepare a detailed construction plan identifying the schedule for major noise-generating construction activities and distribute this plan to adjacent noise-sensitive receptors. The construction plan should also list the construction noise reduction measures identified in this study.

- Noise-generating construction activities should be restricted to between the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday. On weekends and holidays, the Contractor will restrict noise generating activities to the period between 9:00 am and 7:00 pm. The Contractor will request of the Engineer at least 48 hours in advance of the Contractor's intent to work on weekends or holidays. However, it is not typical that the Contractor will intend on working weekend and holidays. If work is necessary outside of these hours, the County should require the contractor to implement a construction noise monitoring

program and, if feasible, provide additional mitigation as necessary (in the form of noise control blankets or other temporary noise barriers, etc.) for affected receptors.

- Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.

- Unnecessary idling of internal combustion engines should be strictly prohibited.

- Locate stationary noise generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project area.

- Utilize "quiet" air compressors and other "quiet" equipment where such technology exists.

Construction Vibration Assessment

Regulatory Criteria

Sonoma County does not have established quantitative vibration limits to regulate construction-related vibration. For structural damage, the California Department of Transportation recommends a vibration limit of 0.5 in/sec PPV for buildings structurally sound and designed to modern engineering standards, 0.3 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a conservative limit of 0.08 in/sec PPV for ancient buildings or buildings that are documented to be structurally weakened. All buildings in the project vicinity are assumed to be structurally sound, but these buildings may or may not have been designed to modern engineering standards. No ancient buildings or buildings that are documented to be structurally weakened are known to exist in the area. Therefore, groundborne vibration levels exceeding 0.3 in/sec PPV would have the potential to result in a vibration impact at residential structures in the project vicinity (see Figure 1).

Construction Vibration Levels

The construction of the project would generate perceptible vibration in the immediate vicinity of the project site when heavy equipment or impact tools are used. Vibration levels would vary depending on soil conditions, construction methods, and equipment used. Table 5 presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet. Vibration levels are highest close to the source, and then attenuate with increasing distance at the rate $(D_{ref}/D)^{1.1}$, where D is the distance from the source in feet and D_{ref} is the reference distance of 25 feet.

The potential for the highest vibration levels would occur during construction at the northern approach road when these activities occur at the nearest point to the residential structure located approximately 220 feet to the north of the bridge site center (see Figure 1) and 30 feet from the center of Freestone Flat Road. At this residence, there could be a risk of damage to plastered walls or ceilings if vibration levels were to exceed 0.3 in/sec PPV. At 30 feet, vibratory rolling would typically produce vibration levels of 0.17 in/sec PPV, below the 0.3 in/sec PPV threshold. Clam shovel drops as close as 30 feet away from the nearest northern residence would also be expected to result in vibration levels of 0.17 in/sec PPV, below the 0.3 in/sec PPV threshold. Vibration

levels from all other sources of vibration, including large bulldozers, would be well below the 0.3 in/sec PPV impact threshold for sound structures. All other structures in the neighboring area have setback distances greater than 200 feet from the proposed construction area.

People can also be adversely affected by excessive vibration levels. The level at which humans begin to perceive vibration is 0.015 inches per second. Vibrations at 0.2 inches per second are considered bothersome to most people, while continuous exposure to long-term PPV is considered unacceptable at 0.12 inches per second. At a distance of 30 feet from the center of Freestone Flat Road, the bordering northern residence may experience bothersome perceived vibration during short-term road work activities. At a distance of 220 feet from the site center, vibration levels at this residence would typically be 0.02 in/sec PPV. Although vibration may at times be perceptible and/or annoying to occupants of nearby residential buildings, this would not be considered an impact due to the short duration and relative infrequency of events.

TABLE 5 Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 ft. (in/sec)
Clam shovel drop		0.202
Hydromill (slurry wall)	in soil	0.008
	in rock	0.017
Vibratory Roller		0.210
Hoe Ram		0.089
Large bulldozer		0.089
Caisson drilling		0.089
Loaded trucks		0.076
Jackhammer		0.035
Small bulldozer		0.003

Source: Transit Noise and Vibration Impact Assessment, United States Department of Transportation, Federal Transit Agency, Office of Planning and Environment, May 2006.

FIGURE 1 Aerial Photo Showing Project Site and Residences in Project Vicinity

APPENDIX D – AIR QUALITY CALCULATIONS

Freestone Flat

San Francisco Bay Area Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.43	Acre	0.43	18,687.24	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	4			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Freestone Flat - San Francisco Bay Area Air Basin, Annual

Project Characteristics - Jan 1, 2022 start of construction

Land Use - 0.429 acre paving

Construction Phase - Refer to PD for details

Off-road Equipment - Incorporated drill rig, air compressor, and pump/generator per activities proposed

Off-road Equipment - Added crane, air compressor, and generators per proposed activities

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Refer to PD for number of workers, haul trucks estimated based on cut/fill (!6 cy trucks), average commute distance for workers 14.9 for sonoma county

Demolition - 1,263 sf of bridge

Grading - Default grading, total of 1750 cy cut and 1750 cy fill

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	15.00
tblConstructionPhase	NumDays	1.00	15.00
tblConstructionPhase	NumDays	100.00	120.00
tblConstructionPhase	NumDays	5.00	32.00
tblConstructionPhase	NumDays	1.00	10.00
tblConstructionPhase	PhaseEndDate	1/17/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	1/18/2022	4/30/2022
tblConstructionPhase	PhaseEndDate	6/8/2022	10/15/2022
tblConstructionPhase	PhaseEndDate	6/15/2022	11/15/2022
tblConstructionPhase	PhaseEndDate	1/14/2022	10/29/2022
tblConstructionPhase	PhaseEndDate	1/19/2022	10/29/2022
tblConstructionPhase	PhaseStartDate	1/15/2022	1/1/2022

Freestone Flat - San Francisco Bay Area Air Basin, Annual

tblConstructionPhase	PhaseStartDate	1/18/2022	4/10/2022
tblConstructionPhase	PhaseStartDate	1/20/2022	5/1/2022
tblConstructionPhase	PhaseStartDate	6/9/2022	10/1/2022
tblConstructionPhase	PhaseStartDate	1/1/2022	10/16/2022
tblConstructionPhase	PhaseStartDate	1/19/2022	10/16/2022
tblGrading	MaterialExported	0.00	1,000.00
tblGrading	MaterialExported	0.00	500.00
tblGrading	MaterialExported	0.00	250.00
tblGrading	MaterialImported	0.00	1,000.00
tblGrading	MaterialImported	0.00	500.00
tblGrading	MaterialImported	0.00	250.00
tblLandUse	LandUseSquareFeet	18,730.80	18,687.24
tblTripsAndVMT	HaulingTripNumber	250.00	0.00
tblTripsAndVMT	HaulingTripNumber	125.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	125.00
tblTripsAndVMT	HaulingTripNumber	6.00	63.00
tblTripsAndVMT	HaulingTripNumber	63.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	250.00
tblTripsAndVMT	WorkerTripLength	10.80	14.90
tblTripsAndVMT	WorkerTripLength	10.80	14.90
tblTripsAndVMT	WorkerTripLength	10.80	14.90
tblTripsAndVMT	WorkerTripLength	10.80	14.90
tblTripsAndVMT	WorkerTripLength	10.80	14.90
tblTripsAndVMT	WorkerTripLength	10.80	14.90
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	5.00	12.00
tblTripsAndVMT	WorkerTripNumber	8.00	16.00

tblTripsAndVMT	WorkerTripNumber	18.00	8.00
tblTripsAndVMT	WorkerTripNumber	5.00	4.00
tblTripsAndVMT	WorkerTripNumber	18.00	12.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1306	1.2429	1.2734	2.7200e-003	0.0312	0.0574	0.0885	6.5800e-003	0.0545	0.0610	0.0000	238.5359	238.5359	0.0478	0.0000	239.7297
Maximum	**0.1306**	**1.2429**	**1.2734**	**2.7200e-003**	**0.0312**	**0.0574**	**0.0885**	**6.5800e-003**	**0.0545**	**0.0610**	**0.0000**	**238.5359**	**238.5359**	**0.0478**	**0.0000**	**239.7297**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1306	1.2429	1.2734	2.7200e-003	0.0312	0.0574	0.0885	6.5800e-003	0.0545	0.0610	0.0000	238.5357	238.5357	0.0478	0.0000	239.7295
Maximum	**0.1306**	**1.2429**	**1.2734**	**2.7200e-003**	**0.0312**	**0.0574**	**0.0885**	**6.5800e-003**	**0.0545**	**0.0610**	**0.0000**	**238.5357**	**238.5357**	**0.0478**	**0.0000**	**239.7295**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2022	3-31-2022	0.0568	0.0568
2	4-1-2022	6-30-2022	0.4226	0.4226
3	7-1-2022	9-30-2022	0.5516	0.5516
		Highest	0.5516	0.5516

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.8600e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8600e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.8600e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8600e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Freestone Flat - San Francisco Bay Area Air Basin, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition of existing bridge	Demolition	10/16/2022	10/29/2022	5	10	
2	Tree removal	Site Preparation	1/1/2022	1/21/2022	5	15	
3	Site prep and utilities	Site Preparation	4/10/2022	4/30/2022	5	15	
4	Site restoration	Site Preparation	10/16/2022	10/29/2022	5	10	
5	Bridge construction	Building Construction	5/1/2022	10/15/2022	5	120	
6	Roadway realignment	Paving	10/1/2022	11/15/2022	5	32	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.43

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Freestone Flat - San Francisco Bay Area Air Basin, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Tree removal	Graders	1	8.00	187	0.41
Tree removal	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site prep and utilities	Graders	1	8.00	187	0.41
Site prep and utilities	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Bridge construction	Air Compressors	1	6.00	78	0.48
Bridge construction	Bore/Drill Rigs	1	6.00	221	0.50
Bridge construction	Cranes	1	4.00	231	0.29
Bridge construction	Forklifts	2	6.00	89	0.20
Bridge construction	Generator Sets	1	6.00	84	0.74
Bridge construction	Pumps	1	6.00	84	0.74
Bridge construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition of existing bridge	Air Compressors	1	6.00	78	0.48
Demolition of existing bridge	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition of existing bridge	Cranes	1	4.00	231	0.29
Demolition of existing bridge	Generator Sets	1	6.00	84	0.74
Demolition of existing bridge	Rubber Tired Dozers	1	1.00	247	0.40
Demolition of existing bridge	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site restoration	Graders	1	8.00	187	0.41
Site restoration	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Roadway realignment	Cement and Mortar Mixers	4	6.00	9	0.56
Roadway realignment	Pavers	1	7.00	130	0.42
Roadway realignment	Rollers	1	7.00	80	0.38
Roadway realignment	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Tree removal	2	8.00	0.00	0.00	14.90	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site prep and utilities	2	12.00	0.00	0.00	14.90	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Bridge construction	9	16.00	3.00	125.00	14.90	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition of existing bridge	7	8.00	0.00	63.00	14.90	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site restoration	2	4.00	0.00	0.00	14.90	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Roadway realignment	7	12.00	0.00	250.00	14.90	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition of existing bridge - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.2000e-004	0.0000	6.2000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7400e-003	0.0606	0.0649	1.1000e-004		3.0800e-003	3.0800e-003		2.9700e-003	2.9700e-003	0.0000	9.8704	9.8704	1.5500e-003	0.0000	9.9092
Total	**6.7400e-003**	**0.0606**	**0.0649**	**1.1000e-004**	**6.2000e-004**	**3.0800e-003**	**3.7000e-003**	**9.0000e-005**	**2.9700e-003**	**3.0600e-003**	**0.0000**	**9.8704**	**9.8704**	**1.5500e-003**	**0.0000**	**9.9092**

3.2 Demolition of existing bridge - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.3000e-004	7.8100e-003	1.7800e-003	2.0000e-005	5.3000e-004	2.0000e-005	5.5000e-004	1.5000e-004	2.0000e-005	1.7000e-004	0.0000	2.3507	2.3507	1.2000e-004	0.0000	2.3536
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.0000e-004	1.0800e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3522	0.3522	1.0000e-005	0.0000	0.3524
Total	**3.8000e-004**	**7.9100e-003**	**2.8600e-003**	**2.0000e-005**	**9.7000e-004**	**2.0000e-005**	**9.9000e-004**	**2.7000e-004**	**2.0000e-005**	**2.9000e-004**	**0.0000**	**2.7029**	**2.7029**	**1.3000e-004**	**0.0000**	**2.7060**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.2000e-004	0.0000	6.2000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7400e-003	0.0606	0.0649	1.1000e-004		3.0800e-003	3.0800e-003		2.9700e-003	2.9700e-003	0.0000	9.8704	9.8704	1.5500e-003	0.0000	9.9092
Total	**6.7400e-003**	**0.0606**	**0.0649**	**1.1000e-004**	**6.2000e-004**	**3.0800e-003**	**3.7000e-003**	**9.0000e-005**	**2.9700e-003**	**3.0600e-003**	**0.0000**	**9.8704**	**9.8704**	**1.5500e-003**	**0.0000**	**9.9092**

3.2 Demolition of existing bridge - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.3000e-004	7.8100e-003	1.7800e-003	2.0000e-005	5.3000e-004	2.0000e-005	5.5000e-004	1.5000e-004	2.0000e-005	1.7000e-004	0.0000	2.3507	2.3507	1.2000e-004	0.0000	2.3536
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.0000e-004	1.0800e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3522	0.3522	1.0000e-005	0.0000	0.3524
Total	**3.8000e-004**	**7.9100e-003**	**2.8600e-003**	**2.0000e-005**	**9.7000e-004**	**2.0000e-005**	**9.9000e-004**	**2.7000e-004**	**2.0000e-005**	**2.9000e-004**	**0.0000**	**2.7029**	**2.7029**	**1.3000e-004**	**0.0000**	**2.7060**

3.3 Tree removal - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0900e-003	0.0000	4.0900e-003	4.5000e-004	0.0000	4.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3500e-003	0.0520	0.0297	7.0000e-005		1.9300e-003	1.9300e-003		1.7800e-003	1.7800e-003	0.0000	6.4128	6.4128	2.0700e-003	0.0000	6.4646
Total	**4.3500e-003**	**0.0520**	**0.0297**	**7.0000e-005**	**4.0900e-003**	**1.9300e-003**	**6.0200e-003**	**4.5000e-004**	**1.7800e-003**	**2.2300e-003**	**0.0000**	**6.4128**	**6.4128**	**2.0700e-003**	**0.0000**	**6.4646**

3.3 Tree removal - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.5000e-004	1.6200e-003	1.0000e-005	6.5000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5283	0.5283	1.0000e-005	0.0000	0.5286
Total	**2.2000e-004**	**1.5000e-004**	**1.6200e-003**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**6.6000e-004**	**1.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5283**	**0.5283**	**1.0000e-005**	**0.0000**	**0.5286**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0900e-003	0.0000	4.0900e-003	4.5000e-004	0.0000	4.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3500e-003	0.0520	0.0297	7.0000e-005		1.9300e-003	1.9300e-003		1.7800e-003	1.7800e-003	0.0000	6.4128	6.4128	2.0700e-003	0.0000	6.4646
Total	**4.3500e-003**	**0.0520**	**0.0297**	**7.0000e-005**	**4.0900e-003**	**1.9300e-003**	**6.0200e-003**	**4.5000e-004**	**1.7800e-003**	**2.2300e-003**	**0.0000**	**6.4128**	**6.4128**	**2.0700e-003**	**0.0000**	**6.4646**

3.3 Tree removal - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.5000e-004	1.6200e-003	1.0000e-005	6.5000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5283	0.5283	1.0000e-005	0.0000	0.5286
Total	**2.2000e-004**	**1.5000e-004**	**1.6200e-003**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**6.6000e-004**	**1.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5283**	**0.5283**	**1.0000e-005**	**0.0000**	**0.5286**

3.4 Site prep and utilities - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0300e-003	0.0000	4.0300e-003	4.4000e-004	0.0000	4.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3500e-003	0.0520	0.0297	7.0000e-005		1.9300e-003	1.9300e-003		1.7800e-003	1.7800e-003	0.0000	6.4128	6.4128	2.0700e-003	0.0000	6.4646
Total	**4.3500e-003**	**0.0520**	**0.0297**	**7.0000e-005**	**4.0300e-003**	**1.9300e-003**	**5.9600e-003**	**4.4000e-004**	**1.7800e-003**	**2.2200e-003**	**0.0000**	**6.4128**	**6.4128**	**2.0700e-003**	**0.0000**	**6.4646**

3.4 Site prep and utilities - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	2.3000e-004	2.4300e-003	1.0000e-005	9.8000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.7925	0.7925	2.0000e-005	0.0000	0.7929
Total	**3.3000e-004**	**2.3000e-004**	**2.4300e-003**	**1.0000e-005**	**9.8000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.7925**	**0.7925**	**2.0000e-005**	**0.0000**	**0.7929**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0300e-003	0.0000	4.0300e-003	4.4000e-004	0.0000	4.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3500e-003	0.0520	0.0297	7.0000e-005		1.9300e-003	1.9300e-003		1.7800e-003	1.7800e-003	0.0000	6.4128	6.4128	2.0700e-003	0.0000	6.4646
Total	**4.3500e-003**	**0.0520**	**0.0297**	**7.0000e-005**	**4.0300e-003**	**1.9300e-003**	**5.9600e-003**	**4.4000e-004**	**1.7800e-003**	**2.2200e-003**	**0.0000**	**6.4128**	**6.4128**	**2.0700e-003**	**0.0000**	**6.4646**

3.4 Site prep and utilities - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	2.3000e-004	2.4300e-003	1.0000e-005	9.8000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.7925	0.7925	2.0000e-005	0.0000	0.7929
Total	**3.3000e-004**	**2.3000e-004**	**2.4300e-003**	**1.0000e-005**	**9.8000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.7925**	**0.7925**	**2.0000e-005**	**0.0000**	**0.7929**

3.5 Site restoration - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.6800e-003	0.0000	2.6800e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9000e-003	0.0347	0.0198	5.0000e-005		1.2900e-003	1.2900e-003		1.1800e-003	1.1800e-003	0.0000	4.2752	4.2752	1.3800e-003	0.0000	4.3098
Total	**2.9000e-003**	**0.0347**	**0.0198**	**5.0000e-005**	**2.6800e-003**	**1.2900e-003**	**3.9700e-003**	**2.9000e-004**	**1.1800e-003**	**1.4700e-003**	**0.0000**	**4.2752**	**4.2752**	**1.3800e-003**	**0.0000**	**4.3098**

3.5 Site restoration - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.4000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1761	0.1761	0.0000	0.0000	0.1762
Total	**7.0000e-005**	**5.0000e-005**	**5.4000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**2.2000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1761**	**0.1761**	**0.0000**	**0.0000**	**0.1762**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.6800e-003	0.0000	2.6800e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9000e-003	0.0347	0.0198	5.0000e-005		1.2900e-003	1.2900e-003		1.1800e-003	1.1800e-003	0.0000	4.2752	4.2752	1.3800e-003	0.0000	4.3098
Total	**2.9000e-003**	**0.0347**	**0.0198**	**5.0000e-005**	**2.6800e-003**	**1.2900e-003**	**3.9700e-003**	**2.9000e-004**	**1.1800e-003**	**1.4700e-003**	**0.0000**	**4.2752**	**4.2752**	**1.3800e-003**	**0.0000**	**4.3098**

3.5 Site restoration - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.4000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1761	0.1761	0.0000	0.0000	0.1762
Total	**7.0000e-005**	**5.0000e-005**	**5.4000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**2.2000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1761**	**0.1761**	**0.0000**	**0.0000**	**0.1762**

3.6 Bridge construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0942	0.8734	0.9632	1.8800e-003		0.0441	0.0441		0.0421	0.0421	0.0000	163.5714	163.5714	0.0350	0.0000	164.4464
Total	**0.0942**	**0.8734**	**0.9632**	**1.8800e-003**		**0.0441**	**0.0441**		**0.0421**	**0.0421**	**0.0000**	**163.5714**	**163.5714**	**0.0350**	**0.0000**	**164.4464**

3.6 Bridge construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.6000e-004	0.0155	3.5300e-003	5.0000e-005	1.0600e-003	4.0000e-005	1.1000e-003	2.9000e-004	4.0000e-005	3.3000e-004	0.0000	4.6640	4.6640	2.4000e-004	0.0000	4.6699
Vendor	5.3000e-004	0.0178	4.4100e-003	5.0000e-005	1.1800e-003	4.0000e-005	1.2200e-003	3.4000e-004	3.0000e-005	3.8000e-004	0.0000	4.6224	4.6224	2.2000e-004	0.0000	4.6279
Worker	3.5200e-003	2.4200e-003	0.0259	9.0000e-005	0.0105	6.0000e-005	0.0105	2.7800e-003	6.0000e-005	2.8400e-003	0.0000	8.4535	8.4535	1.7000e-004	0.0000	8.4578
Total	**4.5100e-003**	**0.0357**	**0.0338**	**1.9000e-004**	**0.0127**	**1.4000e-004**	**0.0129**	**3.4100e-003**	**1.3000e-004**	**3.5500e-003**	**0.0000**	**17.7399**	**17.7399**	**6.3000e-004**	**0.0000**	**17.7556**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0942	0.8734	0.9632	1.8800e-003		0.0441	0.0441		0.0421	0.0421	0.0000	163.5712	163.5712	0.0350	0.0000	164.4462
Total	**0.0942**	**0.8734**	**0.9632**	**1.8800e-003**		**0.0441**	**0.0441**		**0.0421**	**0.0421**	**0.0000**	**163.5712**	**163.5712**	**0.0350**	**0.0000**	**164.4462**

3.6 Bridge construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.6000e-004	0.0155	3.5300e-003	5.0000e-005	1.0600e-003	4.0000e-005	1.1000e-003	2.9000e-004	4.0000e-005	3.3000e-004	0.0000	4.6640	4.6640	2.4000e-004	0.0000	4.6699
Vendor	5.3000e-004	0.0178	4.4100e-003	5.0000e-005	1.1800e-003	4.0000e-005	1.2200e-003	3.4000e-004	3.0000e-005	3.8000e-004	0.0000	4.6224	4.6224	2.2000e-004	0.0000	4.6279
Worker	3.5200e-003	2.4200e-003	0.0259	9.0000e-005	0.0105	6.0000e-005	0.0105	2.7800e-003	6.0000e-005	2.8400e-003	0.0000	8.4535	8.4535	1.7000e-004	0.0000	8.4578
Total	**4.5100e-003**	**0.0357**	**0.0338**	**1.9000e-004**	**0.0127**	**1.4000e-004**	**0.0129**	**3.4100e-003**	**1.3000e-004**	**3.5500e-003**	**0.0000**	**17.7399**	**17.7399**	**6.3000e-004**	**0.0000**	**17.7556**

3.7 Roadway realignment - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0104	0.0947	0.1126	1.8000e-004		4.7400e-003	4.7400e-003		4.4100e-003	4.4100e-003	0.0000	15.0350	15.0350	4.3800e-003	0.0000	15.1444
Paving	5.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0109**	**0.0947**	**0.1126**	**1.8000e-004**		**4.7400e-003**	**4.7400e-003**		**4.4100e-003**	**4.4100e-003**	**0.0000**	**15.0350**	**15.0350**	**4.3800e-003**	**0.0000**	**15.1444**

3.7 Roadway realignment - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.3000e-004	0.0310	7.0600e-003	1.0000e-004	2.1100e-003	9.0000e-005	2.2000e-003	5.8000e-004	9.0000e-005	6.7000e-004	0.0000	9.3280	9.3280	4.7000e-004	0.0000	9.3398
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-004	4.8000e-004	5.1800e-003	2.0000e-005	2.0900e-003	1.0000e-005	2.1100e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.6907	1.6907	3.0000e-005	0.0000	1.6916
Total	**1.6300e-003**	**0.0315**	**0.0122**	**1.2000e-004**	**4.2000e-003**	**1.0000e-004**	**4.3100e-003**	**1.1400e-003**	**1.0000e-004**	**1.2400e-003**	**0.0000**	**11.0187**	**11.0187**	**5.0000e-004**	**0.0000**	**11.0313**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0104	0.0947	0.1126	1.8000e-004		4.7400e-003	4.7400e-003		4.4100e-003	4.4100e-003	0.0000	15.0349	15.0349	4.3800e-003	0.0000	15.1444
Paving	5.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0109**	**0.0947**	**0.1126**	**1.8000e-004**		**4.7400e-003**	**4.7400e-003**		**4.4100e-003**	**4.4100e-003**	**0.0000**	**15.0349**	**15.0349**	**4.3800e-003**	**0.0000**	**15.1444**

3.7 Roadway realignment - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.3000e-004	0.0310	7.0600e-003	1.0000e-004	2.1100e-003	9.0000e-005	2.2000e-003	5.8000e-004	9.0000e-005	6.7000e-004	0.0000	9.3280	9.3280	4.7000e-004	0.0000	9.3398
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-004	4.8000e-004	5.1800e-003	2.0000e-005	2.0900e-003	1.0000e-005	2.1100e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.6907	1.6907	3.0000e-005	0.0000	1.6916
Total	**1.6300e-003**	**0.0315**	**0.0122**	**1.2000e-004**	**4.2000e-003**	**1.0000e-004**	**4.3100e-003**	**1.1400e-003**	**1.0000e-004**	**1.2400e-003**	**0.0000**	**11.0187**	**11.0187**	**5.0000e-004**	**0.0000**	**11.0313**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.8600e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Unmitigated	1.8600e-003	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	**1.8600e-003**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	**1.8600e-003**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX E – TREE REMOVAL EXHIBIT (Revised)

*The Tree Removal Exhibit is preliminary and subject to modification based on final engineering of the project. The intent of presenting the Tree Removal Exhibit is to identify species and location of trees that may be removed as part of project construction.

LEGEND:

- EXISTING R/W
- PROPOSED R/W
- PROPOSED TEMPORARY CONSTRUCTION EASEMENT (TCE)
- TREE REMOVAL
- EXISTING POWERLINE
- PROPOSED POWER LINE

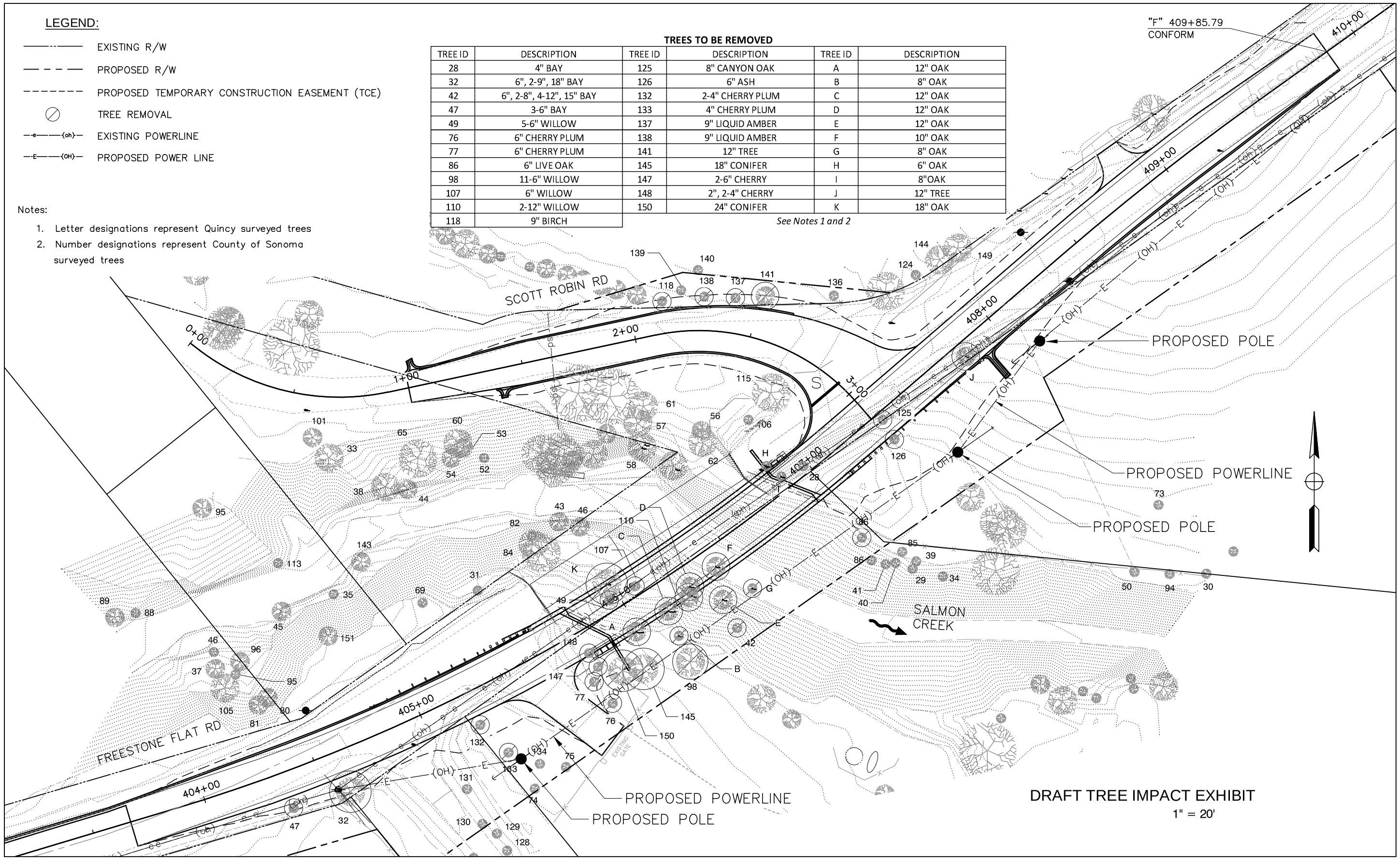
Notes:

1. Letter designations represent Quincy surveyed trees
2. Number designations represent County of Sonoma surveyed trees

TREES TO BE REMOVED

TREE ID	DESCRIPTION	TREE ID	DESCRIPTION	TREE ID	DESCRIPTION
28	4" BAY	125	8" CANYON OAK	A	12" OAK
32	6", 2-9", 18" BAY	126	6" ASH	B	8" OAK
42	6", 2-8", 4-12", 15" BAY	132	2-4" CHERRY PLUM	C	12" OAK
47	3-6" BAY	133	4" CHERRY PLUM	D	12" OAK
49	5-6" WILLOW	137	9" LIQUID AMBER	E	12" OAK
76	6" CHERRY PLUM	138	9" LIQUID AMBER	F	10" OAK
77	6" CHERRY PLUM	141	12" TREE	G	8" OAK
86	6" LIVE OAK	145	18" CONIFER	H	6" OAK
98	11-6" WILLOW	147	2-6" CHERRY	I	8"OAK
107	6" WILLOW	148	2", 2-4" CHERRY	J	12" TREE
110	2-12" WILLOW	150	24" CONIFER	K	18" OAK
118	9" BIRCH				

See Notes 1 and 2



DRAFT TREE IMPACT EXHIBIT

1" = 20'

DESIGN BY	B.GRIMM
DRAWING BY	B.GRIMM
CHECKED BY	M. SANCHEZ

REGISTERED CIVIL ENGINEER

10/02/2020

PLANS APPROVAL DATE

S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\ROADWAY\Z_TREE EXHIBIT_S22-200_L-1 (1)_20201002.DWG 10/2/2020

REGISTERED PROFESSIONAL ENGINEER — XXXXXXX — No. X — Exp. XXXXXX — CIVIL — STATE OF CALIFORNIA

"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION

CONSTRUCTION COMPLETED:

RESIDENT ENGINEER

AS BUILT DRAWINGS BY:

DATE		BY	APPROVED

QUINCY ENGINEERING, INC.
11017 Cobblerock Drive, Suite 100
Sacramento, CA 95670

SONOMA COUNTY — 18 — 50 — AGRICULTURE INDUSTRY RECREATION — CALIFORNIA

COUNTY OF SONOMA
DEPARTMENT OF TRANSPORTATION & PUBLIC WORKS
SUSAN KLASSEN, DIRECTOR

LAYOUT ALT 1

FREESTONE FLAT ROAD BRIDGE REPLACEMENT

ROAD NUMBER	XXX
BUDGET NUMBER	XXX
FISCAL YEAR	2015-16
SHEET NUMBER	----
TOTAL SHEETS	X

APPENDIX F – RESPONSE TO COMMENTS ON THE DRAFT IS/MND

Responses to Comments on the Draft IS/MND

Appendix F includes comments received during the circulation of the Draft Initial Study/Mitigated Negative Declaration (IS/MND) prepared for the Freestone Flat Road Bridge Replacement Project (project).

The Draft IS/MND was circulated for a 32-day public review period that began on August 7, 2020, and ended on September 8, 2020. The Sonoma County Department of Transportation and Public Works received seven comment letters on the Draft IS/MND. The Commenters and letter number are shown in Table F-1.

Table F-1 Letter Number and Commenter

Letter Number	Commenter
1	California Department of Fish and Wildlife
2	Jack and Kathleen Cleary
3	Julia Menapace
4	Julia Menapace
5	Julia Menapace
6	Julia Menapace
7	Bo Schertzer

The comment letters and responses follow. The comment letters have been numbered sequentially and each separate issue raised by the commenter has been assigned a number. The responses to each comment identify first the number of the comment letter, and then the number assigned to each issue (for example, Response 1-1 indicates that the response is for the first issue raised in comment Letter 1).

The Sonoma County Department of Transportation and Public Works presented the Project to the Sonoma County Environmental Review Committee (ERC) at a public ERC meeting on March 23, 2021. The ERC provided comments on the Project design, biological resources mitigation measures, and construction methods.

Where appropriate, in response to the comments received, the text of the IS/MND has been revised. All changes are provided in the Final IS/MND. Text additions are indicated by underlined text. Deleted text is indicated by the use of ~~strikethrough text~~. The changes are summarized in this section, where appropriate.

Letter 1: Gregg Erickson, California Department of Fish and Wildlife

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
2825 Cordelia Road, Suite 100
Fairfield, CA 94534
(707) 428-2002
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

Letter 1

August 31, 2020

Mr. John Leong
Sonoma County DTPW
2300 County Center Drive, Suite B-100
Santa Rosa, CA 95403
John.Leong@sonoma-county.org

Subject: Freestone Flat Road Bridge Replacement Project, Mitigated Negative Declaration, SCH No. 2020089008, Sonoma County

Dear Mr. Leong:

California Department of Fish and Wildlife (CDFW) personnel have reviewed the Mitigated Negative Declaration (MND) for the Freestone Flat Road Bridge Replacement Project (Project). CDFW is submitting comments on the draft MND to inform Sonoma County (County), as the Lead Agency, of our concerns regarding potentially significant impacts to sensitive resources associated with the proposed Project.

CDFW is submitting comments as a Trustee Agency pursuant to the California Environmental Quality Act (CEQA), and is responsible for the conservation, protection, and management of the State's biological resources (Pub. Resources Code, § 21070, Cal. Code Regs., tit. 14, § 15386). CDFW is also considered a Responsible Agency if a project would require discretionary approval, such as permits issued under the California Endangered Species Act (CESA), the Native Plant Protection Act, the Lake and Streambed Alteration (LSA) Program and other provisions of the Fish and Game Code that afford protection to the State's fish and wildlife trust resources.

Environmental Setting

The Project is located at the Freestone Flat Road bridge over Salmon Creek, in Sonoma County. The Project would cross Salmon Creek to the southeast of the Freestone Flat Road crossing. The City of Sebastopol lies five miles to the west and the Community of Freestone lies approximately 0.6 miles to the southeast. The Project area is comprised of riparian forest, coyote brush alliance, eucalyptus, non-native grasslands, developed land and open channel habitat, specifically Salmon Creek.

Project Description

The proposed Project includes replacement of the existing Freestone Flat Road Bridge, which is a two-span, steel-girder truss bridge over Salmon Creek. The existing bridge would be replaced with a two-lane, cast-in-place prestressed concrete box-girder bridge supported on cast-in-drilled-hole piles at the abutments. The new bridge would be located parallel to and southeast of the existing bridge. The existing bridge would

remain in service until the new bridge is complete, then disassembled and removed from the site. Building the bridge on a new alignment requires the construction of new approaches on the east and west sides of the replacement bridge.

Comments and Recommendations

Western yellow-billed Cuckoo (Coccyzus americanus)

The Project includes the removal of approximately 40 riparian trees and construction activities adjacent to habitat that may be occupied by the species, which has the potential to significantly impact Western yellow-billed cuckoo, a State listed as endangered species and federally listed as threatened species. To reduce potential impacts to less-than-significant, CDFW recommends that Mitigation Measure BIO-8 include language stating that if a Western yellow-billed cuckoo is detected during surveys, consultation with CDFW and the U.S. Fish and Wildlife shall occur which may include obtaining a CESA Incidental Take Permit (ITP) and federal authorization prior to Project activities.

1-1

California freshwater shrimp (Syncaris pacifica)

The Project includes the disturbance of 1.303 acres during construction and the removal of approximately 40 trees along the streambank. Although work would be conducted above the ordinary high-water mark (OHWM), the ground disturbance and substantial riparian tree removal could significantly impact California freshwater shrimp, a State and federally listed as endangered species. The Project could impact California freshwater shrimp habitat and potentially cause take if the species is present during Project activities, and this would be a significant impact under CEQA. CDFW recommends that the following language be added as a mitigation measure to reduce potential impacts to less-than-significant:

1-2

> *No Disturbance of California Freshwater Shrimp Habitat. No vegetation shall be disturbed or removed from any portion of the bed, bank, or channel in sections of overhanging banks of Salmon Creek. A qualified biologist knowledgeable about California freshwater shrimp species shall flag the species' habitat, all Project activities shall avoid the flagged area, and the work crews shall be trained on the California freshwater shrimp protection and the habitat avoidance area. Sediment shall be prevented from entering Salmon Creek. The shape and form of streambanks suitable for California freshwater shrimp habitat shall not be disturbed or altered. If the Project may result in impacts to California freshwater shrimp, consultation with CDFW and the U.S. Fish and Wildlife shall occur which may include obtaining a CESA ITP and federal authorization prior to Project activities.*

Riparian Mitigation and Monitoring Plan

The Project would result in the permanent loss of 0.021 acres of riparian forest habitat, the temporary loss of 0.185 acres of riparian forest habitat, and the removal of

1-3

approximately 40 riparian trees. The County proposes to enhance or restore 0.021 acres of riparian habitat as mitigation of the impacts. CDFW recommends that the Riparian Mitigation and Monitoring Plan include, at a minimum, the following:

- *Temporary impacts to riparian habitat restored on-site at a 1:1 ratio (restoration area: impacted area)*
- *Permanent impacts to riparian habitat mitigated for on-site at a 2:1 ratio (mitigation area: impacted area)*
- *Tree replacement ratios (number replaced: number removed):*
  - *Non-native trees replaced on-site with native riparian species at a 1:1 ratio*
  - *Native riparian trees greater than 4 inches diameter at breast height (DBH) replaced on-site at a ratio of 3:1*
  - *Native oak trees replaced on-site at a:*
    - *4:1 ratio for oaks that measure 5 to 10 inches DBH*
    - *6:1 ratio for oaks that measure 10 to 15 inches DBH*
    - *10:1 ratio for oaks the measure greater than 15 inches DBH*

1-3

Filing Fees

CDFW anticipates that the Project will have an impact on fish and/or wildlife, and assessment of filing fees is necessary (Fish and Game Code, § 711.4; Pub. Resources Code, § 21089). Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW.

CDFW appreciates the opportunity to provide comments on the MND for the proposed Project and is available to meet with you to further discuss our concerns. Additionally, CDFW is available to work with the Project applicant in order to complete their LSA Notification. If you have any questions, please contact Mr. James Hansen, Environmental Scientist, at James.Hansen@wildlife.ca.gov; or Ms. Karen Weiss, Senior Environmental Scientist (Supervisory), at Karen.Weiss@wildlife.ca.gov.

Sincerely,

DocuSigned by:
7988F6C4FDC24F2...
Gregg Erickson
Regional Manager
Bay Delta Region

cc: State Clearinghouse (SCH No. 2020089008)

Response to Comment 1-1

Mitigation Measure for Western yellow-billed Cuckoo has been revised as follows:

> **Mitigation Measure BIO-8: Pre-Construction Surveys and Construction Monitoring for Western Yellow-Billed Cuckoo**
>
> Preconstruction surveys for western yellow-billed cuckoo and construction monitoring shall be conducted by a qualified biologist (see Measure BIO-2) in all project areas within suitable habitat and a 500-foot buffer from suitable habitat. In the event that western yellow-billed cuckoo(s) are detected within the work area (the area of active equipment uses), all construction activities in the area shall halt and Caltrans and the Service and CDFW shall be notified by no later than noon of the next business day. Project activities in the area may not proceed until the cuckoo(s) have left the work area. Where cuckoo(s) are detected within 500 feet of the construction area, project activities in the area may proceed with caution under the direction of the qualified biologist who is monitoring the activity of the western yellow-billed cuckoo in the area and has the ability to halt work. If impacts to western yellow-billed cuckoo cannot be avoided, the County and/or Caltrans shall initiate consultation with CDFW and the USFWS, which may include obtaining a California Endangered Species Act Incidental Take Permit and federal authorization.

Response to Comment 1-2

CDFW's comment recommends adding a mitigation measure to avoid impacts to California freshwater shrimp and its habitat from vegetation and tree removal and ground disturbance. Specific concerns include removal of vegetation that overhangs the banks of Salmon Creek, avoidance of California freshwater shrimp habitat and modification of the shape and form of streambanks, sedimentation of Salmon Creek, and consultation with CDFW and USFWS. Each of these concerns is addressed in the IS/MND and summarized below.

Removal of Vegetation Overhanging Salmon Creek

The project involves cutting trees and riparian habitat along the banks of Salmon Creek within the project area. As stated in the Project Description (page IS-12), all vegetation removal would be limited to the area above the ordinary high water mark. Trees and vegetation within the work area would be cut and the stumps would remain in place to maintain soil stability, reduce erosion, and allow re-generating trees, such as willows, to regrow after construction. Only tree stumps in conflict with the new bridge structure would be removed. No tree or vegetation removal is proposed along overhanging banks of Salmon Creek; therefore, removal of riparian vegetation is not anticipated to impact freshwater shrimp, if present in the creek.

Avoidance of California Freshwater Shrimp Habitat

The project does not involve modification to Salmon Creek, disturbance of the undercut banks of the creek, or removal of aquatic roots. Bridge construction, including ground disturbance and excavation for the purpose of constructing the new bridge abutments, would occur between May and October, with the majority of construction anticipated to occur when the creek is dry or the flow is low. Mitigation Measure BIO-4: Exclusion Fencing requires the erection of

temporary exclusion fencing around the limits of work areas and access routes. The text of Mitigation Measure BIO-4 states the following: "Exclusion fencing shall be installed to prevent species entry into active work areas and to mark the limits of construction disturbance at equipment staging areas, site access routes, construction equipment and personnel parking areas, debris storage areas, and any other areas that may be disturbed. The exclusion fencing shall specifically exclude any areas within the limits of the Salmon Creek ordinary high-water mark." (page. IS-56). Mitigation Measure BIO-4 has been modified to expressly state that exclusion fencing would exclude all wetted areas of Salmon Creek from the work area. As a result of excluding all wetted areas of Salmon Creek, all California freshwater shrimp habitat would also be excluded from the work area. Exclusion fencing is required to be installed under the supervision of a qualified biologist. With implementation of Mitigation Measure BIO-4, the exclusion fencing would ensure the avoidance of California freshwater shrimp habitat within Salmon Creek.

Mitigation Measure BIO-4: Exclusion Fencing

Temporary exclusion fencing shall be installed around the limits of work areas and access routes to avoid disturbance in unauthorized areas and ensure California red-legged frog or western pond turtle cannot enter the work area after construction commences. Installation of exclusion fencing shall occur under the supervision of the qualified biologist and immediately following a clearance survey of the area. The exclusion fencing shall have a minimum aboveground height of 30 inches, and the bottom of the fence shall be keyed in at least 4 inches deep and backfilled with soil to prevent wildlife from passing under the fencing. Exclusion fencing shall be installed to prevent species entry into active work areas and to mark the limits of construction disturbance at equipment staging areas, site access routes, construction equipment and personnel parking areas, debris storage areas, and any other areas that may be disturbed. The exclusion fencing shall specifically exclude any areas within the limits of the Salmon Creek ordinary high-water mark and wetted areas of the creek, whichever is higher in elevation.

Mitigation Measure BIO-1: Worker Environmental Awareness Program (WEAP) requires environmental employee education training for all construction personnel. The WEAP will include descriptions of federal and State statutes protecting threatened, endangered, and special-status species that may occur on site. Mitigation Measure BIO-1 has been modified in response to CDFW Comment 1-2 to clarify that the WEAP will train construction personnel about the federally and State-listed and special status species that have potential to occur on site, the location they may occur, and mitigation measures that are required to be implemented to protect the species.

Mitigation Measure BIO-1: Worker Environmental Awareness Program (WEAP)

A Service-approved biologist will conduct employee education training for employees working on earthmoving and/or construction activities. Personnel will be required to attend the presentation, which will describe the Federal and State statutes protecting threatened,

endangered, and special-status species that may be encountered on site; minimization and conservation measures; legal protection of species; and other related issues. Specifically, the WEAP shall include a description of all species identified as having moderate potential to occur in Table 7 of this IS/MND, the areas on site where they may occur, and any mitigation required to reduce impacts on those species. All attendees will sign an attendance sheet along with their printed name, company or agency, email address, and telephone number. The original sign-in sheet will be sent to the Service within seven (7) calendar days of the completion of the training.

Sedimentation of Salmon Creek

Potential impacts from sedimentation of Salmon Creek were discussed in the IS/MND under Hydrology and Water Quality Impact A (page. IS-75) and under Biological Resources Impact A (page. IS-51). The County will be required to implement a Stormwater Pollution Prevention Plan (SWPPP), which includes implementation of sediment control, spill prevention and cleanup best management practices (BMPs) to protect water quality in Salmon Creek. The discussion of sedimentation within the IS/MND has been edited to specifically identify the use of silt fencing, which is a sediment control BMP. With implementation of the SWPPP BMPs, including silt fencing, sediment would be prevented from entering Salmon Creek.

The edited text on page IS-51 appears below:

> The County would be required to implement a Stormwater Pollution Prevention Plan (SWPPP), which includes implementation of sediment control (e.g., silt fencing), spill prevention and cleanup BMPs to protect water quality in Salmon Creek. The impact on special-status fish and California freshwater shrimp from sedimentation and other water quality impacts to Salmon Creek would be less than significant. No mitigation is required.

Consultation with CDFW and USFWS

California freshwater shrimp are listed as endangered under the State and federal Endangered Species Acts; therefore, impacts that cause "take" of the species require authorization from CDFW through an Incidental Take Permit, and from USFWS through Section 7 or Section 10 consultation. Section 7 consultation occurs when a federal agency consults USFWS regarding any action the agency carries out, funds, or authorizes (such as through a permit) if the action may affect a federally listed endangered or threatened species.

The County has received federal funding for replacement of Freestone Flat Road Bridge. Caltrans Local Assistance has been delegated authority by the Federal Highway Administration to conduct Section 7 consultation for projects that involve federal funding. Caltrans consulted with USFWS regarding potential impacts to federally listed species, including the California freshwater shrimp, for the project. USFWS issued a Not Likely to Adversely Affect determination for the project's potential impacts to California freshwater shrimp on July 10, 2020 per Biological Opinion 08ESMF00- 2020-F-1273.

The County has not consulted with CDFW regarding the Incidental Take Permit for California freshwater shrimp because the project has been designed to avoid "take" of the species, which is defined in the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (Fish & G. Code, §86).

If project work areas are modified to include wetted areas of Salmon Creek, or if BMPs intended to avoid sedimentation of Salmon Creek are determined to be infeasible, the County would consult with CDFW regarding potential take of California freshwater shrimp prior to commencement of project activities.

Response to Comment 1-3

CDFW's comment regarding clarification of Mitigation Measure BIO-9: Riparian Mitigation and Monitoring Plan has been incorporated into the text of the mitigation measure. The revised mitigation measure reads as follows:

Mitigation Measure BIO-9: Riparian Mitigation and Monitoring Plan

The County shall enhance ~~or~~ and restore ~~0.021 acre of~~ riparian habitat to mitigate for permanent and temporary impacts. The County shall prepare a Riparian Mitigation and Monitoring Plan that addresses mitigation and monitoring for riparian habitat that shall be impacted by the project. The Riparian Mitigation and Monitoring Plan will be provided to CDFW for review and approval prior to the beginning of construction and will also address mitigation requirements contained in the CDFW Streambed Alteration Agreement. The plan shall, at a minimum:

- Identify the location of the mitigation site(s). The County's preference is for mitigation to occur on site or in the immediate project vicinity (along Salmon Creek). The County shall consider off-site mitigation only if mitigation along Salmon Creek is infeasible;
- Require the following mitigation ratios for temporary and permanent impacts. Impact acreage will be based on the project's final engineering design:
    - Temporary impacts to 0.185 acre of riparian habitat restored on-site at a 1:1 ratio (restoration area: impacted area)
    - Permanent impacts to 0.021 acre of riparian habitat mitigated for on-site at a 2:1 ratio (mitigation area: impacted area) or off-site at a ratio to be determined in coordination with CDFW as part of the Streambed Alteration Agreement
- Include the following tree replacement ratios (number replaced: number removed):
    - Non-native trees greater than 4 inches diameter at breast height (DBH) replaced on-site with native riparian species at a 1:1 ratio
    - Native riparian trees greater than 4 inches DBH replaced on-site at a ratio of 3:1
    - Native oak trees replaced on-site at a:
        - 4:1 ratio for oaks that measure 5 to 10 inches DBH
        - 6:1 ratio for oaks that measure 10 to 15 inches DBH
        - 10:1 ratio for oaks the measure greater than 15 inches DBH
- A schematic depicting the mitigation area including initial site photographs;
- The species to be seeded and planted and the ratio of seed mix and/or plantings for each

species;

- A work schedule, including names, titles and companies for all individuals who are involved in preparing the plan and conducting activities;
- Specific success criteria;
- A maintenance and monitoring program for 5 years, unless success criteria are met prior to 5 years, in which case maintenance and monitoring would cease; and
- Contingency measures should the success criteria not be met

Tribal correspondence has been redacted and the remainder of this page is intentionally left blank.

Letter 2: Jack and Kathleen Cleary

ug.20.2016 02:15 PM Jack Cleary [redacted] PAGE. 1/ 1

V bar C
Vineyards

Jack & Kathleen Cleary
[redacted]

Letter 2

Fax

To: Project Mgr. John Loods From: Jack Cleary

Fax: [redacted] Pages: 1

Phone: [redacted] Date: Aug. 20, 2020

Re: Freestone Flat Road Bridge CC:

- Comments:

Mr. Loods,

My son and I would like to have a short meeting at your county office per your convenience. Please contact me by cell phone # [redacted]

Thank you

Jack Cleary

2-1

Received Time Aug. 20. 2020 3:49PM No. 0878

Response to Comment 2-1

County staff contacted Mr. Cleary on August 31, 2020 and discussed impacts to a driveway on the eastern side of the project area and the impacts to fencing and trees near the intersection of Scott Robin Road and Freestone Flat Road, impacts to fencing and trees, and the right-of-way acquisition process.

Letter 3: Julia Menapace

Subject: Re: Attention John Leong - Re. Freestone Flat Rd. Bridge Replacement.
From: Julia Menapace [redacted]
Date: 8/28/2020, 8:36 AM
To: John Leong <John.Leong@sonoma-county.org>

Letter 3

EXTERNAL

My schedule for today is already quite full.

Monday the 31st I have available time between 11 am and 3 pm, and after 4 pm.

Tuesday September 1st I could meet until 11 am, between 1 and 3 pm, and after 4:30.

Wednesday the 2nd I have the entire afternoon after 12:30.

Meanwhile there are a few questions you might be able to answer be email.

1. Are any of the trees slated to be removed covered by the Tree Protection Ordinance and if so which ones? 3-1

2. Does the ordinance imply that any other trees cut will not be "replaced"?

3. Are there provisions in the plan to remediate the area within the proposed R/W once construction is complete? 3-2

If the IS/MND covers these questions please forgive me. I am still working my way through the document.

On my property the Temporary Construction Easement appears to fall **inside** the proposed R/W (right of way?). The green line defining the Project Footprint encompasses both with room to spare. I cannot tell from the maps where my front fence line and gate fall relative to these delineations. 3-3

4. Am I correct in understanding the the exclusion fence would be established on the green / Project Footprint line? 3-4

4. Will my front fence and gate be impacted by this plan? How about the water taps that fall within the project footprint? 3-5

Is the land inside the proposed R/W subject to eminent domain? If not, is the R/W some form of easement? Please explain. It seems clear that the area occupied by the new roadway would have to change ownership. 3-6

Re: Attention John Leong - Re. Freestone Flat Rd. Bridge Replacement.

> On Aug 27, 2020, at 5:22 PM, John Leong <John.Leong@sonoma-county.org> wrote:
>
> Hi Julia,
>
> I can try phone calling you on Friday August 28 if you have reviewed the attachments that were sent in my previous e-mail.
>
> Sincerely,
>
> John C. Leong
> County of Sonoma
> Dept. of Transportation & Public Works
> 2300 County Center Drive, Suite B-100
> Santa Rosa, CA 95403
> Phone: (707) 565-2231
> FAX: (707) 565-2620
> E-MAIL: John.Leong@sonoma-county.org
>
> -----Original Message-----
> From: Julia Menapace [redacted]
> Sent: Thursday, August 27, 2020 10:47 AM
> To: John Leong <John.Leong@sonoma-county.org>
> Subject: Re: Attention John Leong - Re. Freestone Flat Rd. Bridge Replacement.
>
> EXTERNAL
>
> Thank you for the maps. I was able to open them in Acrobat reader and am in the process of interpreting their contents as best I can.
>
> > On Aug 26, 2020, at 5:50 PM, John Leong <John.Leong@sonoma-county.org> wrote:
> >
> > Hi Julia,
> >
> > Attached are the following for the Freestone Flat Road Bridge Replacement project:
> >
> > ---DRAFT "Tree Impact Exhibit"
> >
> > ---DRAFT "Utility Exhibit"

Re: Attention John Leong - Re. Freestone Flat Rd. Bridge Replacement.

---Google Maps' picture of #1291 Freestone Flat Road

I hope you are able to open and view the attachments. These attachments should help for our meeting. IF it works, I was going to hold a Web Ex meeting to share the attachments during a potential future Web Ex meeting.

Or, perhaps we can discuss these attachments by phone.

Please note that the attached exhibits are "DRAFT" and not finalized. The DRAFT "Tree Exhibit" shows the driveway and the trees that are impacted. The DRAFT "Utility Exhibit" shows the proposed new bridge and Freestone Flat Road alignments.

Please let me know if you can open and view the attachments, then we can find a mutual day/time that works and discuss over the phone.

Sincerely,

John C. Leong
County of Sonoma
Dept. of Transportation & Public Works
2300 County Center Drive, Suite B-100
Santa Rosa, CA 95403
Phone: (707) 565-2231
FAX: (707) 565-2620
E-MAIL: John.Leong@sonoma-county.org

-----Original Message-----
From: tpw-bridges
Sent: Wednesday, August 26, 2020 5:25 PM
To: John Leong <John.Leong@sonoma-county.org>
Subject: FW: Attention John Leong - Re. Freestone Flat Rd. Bridge Replacement.

Forwarding

-----Original Message-----
From: Julia Menapace [redacted]
Sent: Wednesday, August 26, 2020 2:02 PM
To: tpw-bridges <tpw-bridges@sonoma-county.org>
Subject: Re: Attention John Leong - Re. Freestone Flat Rd. Bridge Replacement.

Re: Attention John Leong - Re. Freestone Flat Rd. Bridge Replacement.

EXTERNAL

Thank you for your response.

I am interested in how the map in the IS/MND overlays the features of the actual landscape the bridge project will be impacting.

I am not familiar with Web Ex or how meeting online can clarify these questions.

I am flexible with day and time (within the constraints of my current commitments) and open to any method that works to answer my questions.

My questions are:

1. What part of my property will be permanently taken? 3-7

2. What part of my property will be taken for the work zone and for how long? 3-8

(Presumably these areas have been surveyed but I don't see any markers on my property showing where the boundaries will fall.)

3. Does the work zone impact my front fence line or my gate? How about the water taps I use for my landscaping there? 3-9

4. Which trees on my property will be cut? 3-10

(It seems these have been identified and counted but I can't tell which ones they are by looking at the map or the trees.)

5. What provisions will be made to restore the work zone afterwards? 3-11

6. What will the entrance to my property look like with the new road in place? 3-12

7. Will I have enough driveway left outside my gate to safely assess traffic and merge onto the road? 3-13

8. How will I come and go from my property during construction? How will I get my mail? 3-14

9. Where will the noise sensors be placed? 3-15

10. Will the public comment period be extended due to the disruptions of the wildfires? 3-16

My phone number is [redacted]

Re: Attention John Leong - Re. Freestone Flat Rd. Bridge Replacement.

On Aug 25, 2020, at 5:04 PM, tpw-bridges <tpw-bridges@sonoma-county.org> wrote:

Hi Julia,

Public Works received this e-mail and your voice mail message. Are you able to participate in online Web Ex meetings that will hopefully help answer your questions? Perhaps we can find a mutual day and time that works.

Sincerely,
-John

-----Original Message-----
From: Julia Menapace [redacted]
Sent: Tuesday, August 18, 2020 10:29 AM
To: tpw-bridges <tpw-bridges@sonoma-county.org>
Subject: Attention John Leong - Re. Freestone Flat Rd. Bridge Replacement.

EXTERNAL

Hello John,

I am Julia Menapace, the property owner at [redacted] Freestone Flat Rd. The western edge of my property will be significantly impacted by the Freestone Flat Road Bridge Replacement Project. Figure 5 in the IS/MND provides an overall impression but is not sufficient show how the project components overlap my gate, driveway and natural landscape elements. 3-17

Within the review period I would appreciate a site visit from you, or a qualified member of your team, to clarify the project's impacts on the ground. In particular I would like to see where the new road will run relative to my existing fence and gate, and how my driveway will be re-routed. I also want to see which trees are slated to be cut and hear any plans to restore the landscape post construction. 3-18 3-19

My time is relatively flexible these days as I am working from home. I can be reached at [redacted].

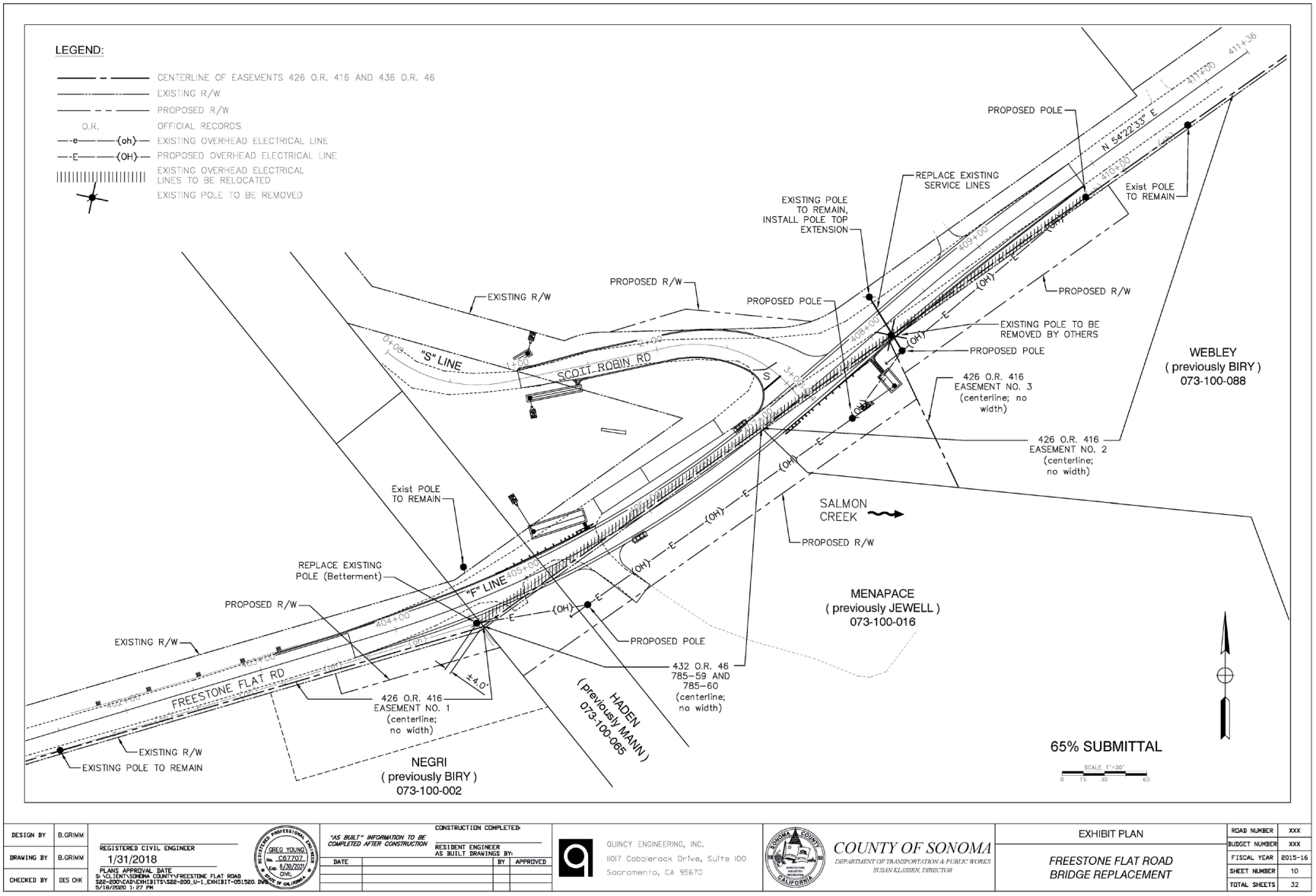
Thank you for your consideration,
Julia Menapace

THIS EMAIL ORIGINATED OUTSIDE OF THE SONOMA COUNTY EMAIL SYSTEM.
Warning: If you don't know this email sender or the email is unexpected, do not click any web links, attachments, and never give out your user ID or password.

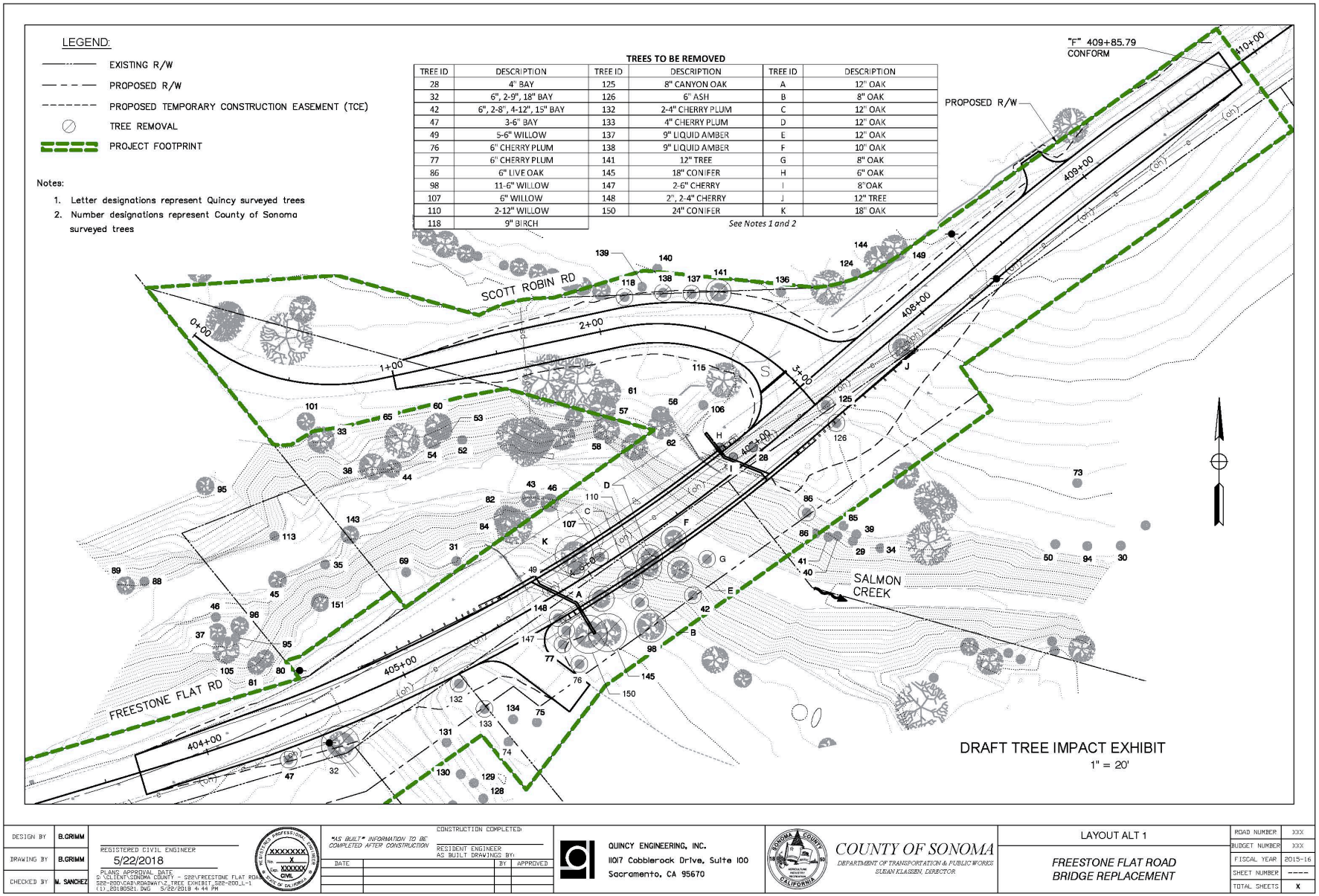
Re: Attention John Leong - Re. Freestone Flat Rd. Bridge Replacement.

> THIS EMAIL ORIGINATED OUTSIDE OF THE SONOMA COUNTY EMAIL SYSTEM.
> Warning: If you don't know this email sender or the email is unexpected, do not click any web links, attachments, and never give out your user ID or password.
> <20180522_Tree Exhibit.pdf><S22-200_U-1_EXHIBIT-051820.pdf><1291-FreestoneFlatRd-GoogleMaps.JPG>
>
> THIS EMAIL ORIGINATED OUTSIDE OF THE SONOMA COUNTY EMAIL SYSTEM.
> Warning: If you don't know this email sender or the email is unexpected, do not click any web links, attachments, and never give out your user ID or password.

THIS EMAIL ORIGINATED OUTSIDE OF THE SONOMA COUNTY EMAIL SYSTEM.
Warning: If you don't know this email sender or the email is unexpected,
do not click any web links, attachments, and never give out your user ID or password.



DESIGN BY	B.GRIMM	REGISTERED CIVIL ENGINEER	"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION	QUINCY ENGINEERING, INC.	COUNTY OF SONOMA	EXHIBIT PLAN	ROAD NUMBER XXX
DRAWING BY	B.GRIMM	1/31/2018	CONSTRUCTION COMPLETED:	11017 Cobblerock Drive, Suite 100	DEPARTMENT OF TRANSPORTATION & PUBLIC WORKS	FREESTONE FLAT ROAD BRIDGE REPLACEMENT	BUDGET NUMBER XXX
CHECKED BY	DES CHK	PLANS APPROVAL DATE	RESIDENT ENGINEER	Sacramento, CA 95670	SUSAN KLASSEN, DIRECTOR		FISCAL YEAR 2015-16
		S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\EXHIBITS\S22-200_U-1_EXHIBIT-051520.DWG 5/18/2020 1:27 PM	AS BUILT DRAWINGS BY: DATE / BY / APPROVED				SHEET NUMBER 10
							TOTAL SHEETS 32



DESIGN BY	B.GRIMM	REGISTERED CIVIL ENGINEER 5/22/2018 PLANS APPROVAL DATE	"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION	CONSTRUCTION COMPLETED: RESIDENT ENGINEER AS BUILT DRAWINGS BY:	QUINCY ENGINEERING, INC. 11017 Cobblerock Drive, Suite 100 Sacramento, CA 95670	COUNTY OF SONOMA DEPARTMENT OF TRANSPORTATION & PUBLIC WORKS SUSAN KLASSEN, DIRECTOR	LAYOUT ALT 1	ROAD NUMBER	XXX
DRAWING BY	B.GRIMM						FREESTONE FLAT ROAD BRIDGE REPLACEMENT	BUDGET NUMBER	XXX
CHECKED BY	M. SANCHEZ							FISCAL YEAR	2015-16
								SHEET NUMBER	-----
								TOTAL SHEETS	X

Response to Comment 3-1

A Tree Removal Exhibit for the project has been provided in Appendix E of the IS/MND. The Tree Removal Exhibit identifies trees that are anticipated to be removed during project construction; however, additional refinement of the Tree Removal Exhibit will occur as the engineering design is finalized. Protected trees in Sonoma County are subject to the County's Tree Protection Ordinance (Section 26-88-010(m) of the Sonoma County Code). The ordinance identifies the following species as protected trees: big leaf maple (*Acer macrophyllum*), black oak (*Quercus kelloggii*), blue oak (*Quercus douglasii*), coast live oak (*Quercus agrifolia*), interior live oak (*Quercus wislizenii*), madrone (*Arbutus menziesii*), oracle oak (*Quercus morehus*), Oregon oak (*Quercus garryana*), redwood (*Sequoia sempervirens*), Valley oak (*Quercus lobata*), California bay (*Umbellularia California*) and their hybrids.

Protected oak and bay trees occur within the project footprint and may be removed during project construction. Protected trees would be replaced in compliance with the Sonoma County Tree Protection Ordinance. The Sonoma County Tree Protection Ordinance determines the amount and species of tree replacement required for a project using a ratio of removed arboreal value / existing arboreal value. If the project's arboreal value ratio exceeds 50 percent, then tree replacement would be required. All trees to be replaced would be the same native species as that removed. Additional discussion of tree removal and compliance with the Tree Protection Ordinance is provided in the IS/MND, Section: Biological Resources, Impact (E), on page IS-61.

Response to Comment 3-2

Following construction, temporary impacts from ground disturbance and/or vegetation removal would be restored. Disturbance to riparian habitats would be restored in accordance with Mitigation Measure BIO-9: Riparian Mitigation and Monitoring Plan. Other habitats that may be temporarily disturbed during construction would be hydroseeded and planted. Temporary impacts to private property, including relocation of mailboxes and gates, would be restored to the original condition. Site restoration is discussed in the Project Description of the IS/MND, on page IS-15.

Response to Comment 3-3

A temporary construction easement is no longer proposed on the Menapace property. The County will acquire new right-of-way to encompass the new bridge and relocated road segments of Freestone Flat Road. The green line identifying the Project Footprint on the Tree Removal Exhibit serves as the boundary that encompasses all project elements and does not represent temporary or permanent land acquisition. The Project Footprint boundary includes the fence and gate at 1291 Freestone Flat Road. A staging area and temporary work area are proposed on private property along the south side of Freestone Flat Road. Project construction would require temporarily re-routing the existing private driveway at 1291 Freestone Flat Road during construction of the new bridge. The existing gate, fence, stone pillars, and mailbox may also be relocated during bridge construction. Following construction, the existing driveway would be restored in its original location. Gates, fencing, stone pillars, and mailboxes would be restored to their original conditions. Refer to Figure 5 on page IS-9 of the IS/MND for the project site boundary and the locations of project components within the project site. The Project

Description of the IS/MND includes a discussion of modifications to the private driveway on page IS-14. Site restoration is discussed on page IS-15.

Response to Comment 3-4

The green line labeled as the Project Footprint on the Tree Removal Exhibit represents the boundary of the area in which project elements occur. The Project Footprint is not representative of any fencing; however, two types of fencing are proposed to be installed during construction—silt fencing and staging area security fencing. Silt fencing would be installed around the perimeter of the site to avoid transport of sediment offsite during rain events and sedimentation of Salmon Creek. Silt fencing would also be used for wildlife exclusion fencing (Mitigation Measure BIO-4) to prevent special-status wildlife species from entering the construction areas. Silt fencing would not be installed across roads or private driveways and would not impede access to Freestone Flat Road or private properties.

Temporary perimeter fencing, such as cyclone fencing or similar fence type, would be installed around the staging area (refer to Figure 5 on page IS-9 of the IS/MND) to provide security for equipment and materials that may be stored on site.

Response to Comment 3-5

The existing driveway at 1291 Freestone Flat Road would be impacted by the project. The driveway would be temporarily re-routed to avoid construction activities. The existing entrance gate, fencing, stone pillars and mailbox may be removed or relocated during construction. Irrigation to vegetation that occurs within the footprint of the realigned Freestone Flat Road would be removed. Following construction, the driveway, gate, fence, and mailbox would be restored to pre-project conditions to the extent feasible. Due to the relocation of Freestone Flat Road, which would be approximately 20 feet closer to the property[1], permanent modification to the location of the driveway, gate, fence, and mailbox may be necessary. As such, irrigation and vegetation within the footprint of the relocated road would not be replaced. The County will determine specific property modifications in consultation with landowners during the right-of-way acquisition process.

Response to Comment 3-6

The California Environmental Quality Act (CEQA) requires the consideration of environmental impacts from physical changes to the environment. Use of eminent domain and transfer of property ownership is not considered as a physical change to the environment; therefore, the IS/MND does not address methods of the right-of-way acquisition. It is expected that the County would coordinate with landowners to obtain ownership of the property within the proposed right-of-way during the right-of-way acquisition phase of the project.

[1] Distance is based on preliminary 65% engineering design

Response to Comment 3-7
Comment refers to eminent domain and transfer of land ownership, which were addressed in response to a previous comment. Refer to Response to Comment 3-6.

Response to Comment 3-8
A temporary staging area, temporary work area, and relocation of an existing driveway would be established on private and County-acquired properties south of Freestone Flat Road and would be secured with a temporary easement. Project construction is anticipated to take approximately 6 to 8 months. Following construction, disturbed areas would be restored to pre-project conditions. Modifications to the property from the construction of the realigned roadway and new bridge would be permanent. Refer to Figure 5 on the IS/MND (page IS-9) for the boundaries of project sites and the locations of project components.

Response to Comment 3-9
Comment refers to impacts on the existing fence, gate, and irrigation, which were addressed in response to a previous comment. Refer to Response to Comment 3-5.

Response to Comment 3-10
The Draft Tree Removal Exhibit in Appendix E of the IS/MND has been updated to reflect currently proposed easements and ROW. The tree exhibit preliminarily identifies trees that are anticipated to be removed as part of the project. Trees of measurable size that occur within the project footprint have been assigned an identification letter or number. Trees to be removed are indicated in the exhibit using a symbol identified in the legend of the Tree Removal Exhibit. A table titled "Trees to Be Removed" also appears in the Tree Removal Exhibit and identifies trees to be removed by the identification letter or number. Approximately 20 trees have been identified for removal on the Menapace property.

Response to Comment 3-11
Comment refers to restoration of temporary impacts following construction, which was addressed in response to previous comments. Refer to Response to Comment 3-2.

Response to Comment 3-12
The Menapace property would have reduced tree cover following construction because trees within the footprint of the realigned road and within the temporary work area (refer to IS Figure 5 on page IS-9) would be removed. The existing driveway would be approximately 20 feet shorter due to the location of the realigned Freestone Flat Road. However, the design is preliminary and could change during final design process. If the existing gate, fence, and mailbox are removed during construction, they would be re-installed in a location determined in consultation with the landowner, outside the limits of the County's new right-of-way. Specific placement of the gate, fence, and mailbox would be determined in coordination with the landowner during the final design process.

Response to Comment 3-13
The project has been designed to meet the state-mandated safety standards, including consideration of private driveways intersecting the realigned Freestone Flat Road. In the

preliminary design, approximately 40 feet of private driveway would be available between the gate and Freestone Flat Road. Safety and design related to driveway realignment and visibility along the road would be considered during final design.

Response to Comment 3-14
The private driveway would be temporarily or permanently realigned to ensure access for the residents is maintained during construction. Discussion of the temporary driveway relocation is provided on page IS-14 of the IS/MND, Section: Roadway Approach Realignment. Mailboxes that occur within the footprint of realigned Freestone Flat Road would be temporarily relocated in coordination with the United States Postal Service. Once construction is complete, mailboxes for residences would be reinstalled near private driveways, in coordination with landowners.

Response to Comment 3-15
Installation of noise sensors is not proposed as part of the project. As discussed in the IS/MND, the project would result in temporary noise increases during construction, however, the noise impacts would be reduced to a less-than-significant level with implementation of Mitigation Measure NOI-1 Noise Reduction Techniques. Noise impacts are provided between pages IS-79 and IS-83 of the IS/MND.

Response to Comment 3-16
The public comment period is not extended. The public comment period for the Draft IS/MND began on August 7, 2020 and ended on September 8, 2020. As stated in the Notice of Intent to Adopt a Mitigated Negative Declaration, comments received after the close of the comment period will still be included in the public record for consideration by the decision-making body; however, late comments might not be included in the staff report for more advanced consideration.

Response to Comment 3-17
The project design includes approximately 60 feet of the Menapace parcel driveway between the existing gate and the current location of Freestone Flat Road. Property between the gate and existing Freestone Flat Road would likely be impacted during project construction. The location of the realigned Freestone Flat Road would be approximately 20 feet closer to the existing gate, as indicated in the 65% engineering design at the Menapace property and would conflict with trees and natural landscape elements within the footprint of the realigned roadway. Minor modifications to the Freestone Stone Road realignment could occur during the final engineering design.

Response to Comment 3-18
John Leong, Project Manager for the Sonoma County Department of Transportation and Public Works contacted Ms. Menapace via email on August 25, August 26, August 27, and August 28, 2020 and via telephone on September 3, 2020 to discuss concerns about the project. County representatives conducted a site visit on September 23, 2020, and met with Ms. Menapace to discuss the project. Specific questions about the right-of-way acquisition will be addressed with landowners during the right-of-way acquisition phase of the project.

Response to Comment 3-19

Comment refers to tree removal, which was discussed in response to previous comments. Refer to Responses to Comments 3-1, 3-2, 3-4, and 3-10.

Letter 4: Julia Menapace

Re: Attention John Leong - Re. Freestone Flat Rd. Bridge Replacement.

Subject: Re: Attention John Leong - Re. Freestone Flat Rd. Bridge Replacement.
From: Julia Menapace [redacted]
Date: 9/3/2020, 9:43 AM
To: John Leong <John.Leong@sonoma-county.org>

Letter 4

EXTERNAL

Hello John,

This week kind of got away from me! I am available for a conversation to clarify outstanding questions anytime today except between 1 and 2pm, or anytime Friday the 4th after 10:30.

I've digested the IS/MND and the utility and tree maps you sent me. These questions remain:

1. Where is my fence line relative to the exclusion fence / project footprint? How will construction impact my front fence and gate? 4-1

2. The two water taps that service the front of the property are within the project footprint. Will I continue to have use of them? Several smaller trees in the area are watered from these taps. 4-2

3. Does the tree cutting map take into account the 15' tree exclusion zone for the NEW power pole location? Or will additional trees need to be cut to accommodate the new pole location? 4-3

4. It looks like 9 of the trees slated be cut on my property must be replaced under the Tree Protection Ordinance: one Bay and eight oaks. Given that overhead power lines will be routed through the area where the trees now stand where will the replacement trees be planted? How will the area under the power lines be restored? 4-4

5. The drop from the new roadway's surface onto my driveway is foreshortened and so steeper. How far will new paving go to blend the inclines? 4-5

6. What is the path of the temporary gravel roadway to be built for me? What happens with it afterwards? 4-6

Response to Comment 4-1
Comment refers to impacts on the existing fence and gate, which were addressed in response to a previous comment. Refer to Response to Comment 3-4 and Response to Comment 3-5.

Response to Comment 4-2
Comment refers to impacts on the existing fence and irrigation, which were addressed in response to a previous comment. Refer to Response to Comment 3-5.

Response to Comment 4-3
The Tree Removal Exhibit provided in Appendix E of the IS/MND has been updated and accounts for tree removal for all project activities, including the location of the new utility poles. Discussion of utility poles relocation impacts related to tree removal and trimming is provided in the Utilities and Service Systems Impact (A) on page IS-92 of the IS/MND.

Response to Comment 4-4
The location of replacement trees would be determined in the Tree Replacement and Monitoring Plan as required by Mitigation Measure BIO-14 prior to the start of construction. The Tree Replacement and Monitoring Plan will consider potential conflicts with utilities and avoid planting replacement trees within the utility corridor. All areas disturbed by project activities, including the area under the power lines, would be restored using a hydroseed mix following construction.

Response to Comment 4-5
Preliminary engineering for construction on the driveway at 1291 Freestone Flat Road includes approximately 40 linear feet of paving between the relocated Freestone Flat Road and the residence at 1291 Freestone Flat Road. Modifications to the private driveway at the intersection with Freestone Flat Road include increasing the slope of the driveway to meet the elevation of Freestone Flat Road. Minor modifications to the Freestone Flat Road realignment could occur during the final engineering design and right-of-way negotiations with the property owner.

Response to Comment 4-6
The project preliminary design includes approximately 60 linear feet of the existing driveway between the existing gate and the current location of Freestone Flat Road. Following construction, the driveway would be restored to the existing perpendicular intersection with Freestone Flat Road. Discussion of the temporary driveway is also provided in the Project Description, Section: Roadway Approach Realignment, on page IS-14 of the IS/MND.

Letter 5: Julia Menapace

Gmail

Letter 5

Freestone Flat Rd Bridge: Property owner(s), IS/MND comments E-Mail 4 Four of ?

John Leong <John.Leong@sonoma-county.org> Tue, Sep 22, 2020 at 12:34 PM
To: Greg Young <gregy@quincyeng.com>, Rita Wilke <rita.wilke@panoramaenv.com>
Cc: Yingying Cai <yingying.cai@panoramaenv.com>

Hi Rita and Greg—I had a phone conversation with Julia Menapeace, property owner at [redacted] Freestone Flat Road on Thursday September 3, 2020 (~11:40 am to 1 pm) RE: the Freestone Flat Rd Bridge project. She had specific concerns about her property and the project.

- Discussed the DRAFT Utility exhibit and DRAFT Tree exhibit with property owner, the potential impacts that the project has on 1291 Freestone Flat Road. Described that the project proposes the new bridge and utility relocation would be moving towards their property.

- I mentioned that the IS/MND environmental document was for environmental-related comments (i.e., habitat, species, vegetation) and environmental agencies may be making comments and that specific revegetation requirements would be determined in the environmental process.

- Property owner asked about R/W phase; I mentioned that County submitted request for authorization to Caltrans to begin R/W phase, need authorization for County to be eligible for reimbursable work.

Property owner's concerns included:

- the trees to be removed in the proposed R/W acquisition area and re-planting 5-1
- potential impacts to the fence, gate; if the projects causes impacts to the fence and/or gate, potential relocation of gate or new fence installation caused by project's impacts, would be nice if gate and fences would be shown on the tree and utility exhibits. 5-2
- impacts to two existing water taps near two oak trees that are in the proposed R/W 5-3
- IS/MND mentions about a temporary gravel driveway and the use of [redacted] Freestone Flat's driveway as access to a potential staging area; property owner needs access to her driveway. 5-4
- Updating the tree exhibit's proposed R/W, TCE to make it consistent with the DRAFT Utility exhibit 5-5
- Most of the [specific property] concerns would be dealt with during the R/W acquisition process. 5-6

Julia will submit her comments to the IS/MND by the due date of the public comment review period—September 8, 2020.

Response to Comment 5-1
Comment refers to impacts related to tree removal and replacement on private property, which were addressed in response to a previous comment. Refer to Response to Comments 3-1, 3-10, 3-19, 4-3 and 4-4.

Response to Comment 5-2
Comment refers to potential impacts to the gate and fence located on private property. Refer to Response to Comments 3-3, 3-5, 3-9, 3-13, 3-17, 3-18, and 4-1 regarding potential impacts to the gate and fence.

Response to Comment 5-3
Comment refers to impacts on irrigation infrastructure on private property, which were addressed in response to a previous comment. Refer to Response to Comment 3-5.

Response to Comment 5-4
Comment refers to maintaining access to 1291 Freestone Flat Road and re-routing the private driveway to maintain access, which was addressed in response to a previous comment. Refer to Response to Comment 3-13.

Response to Comment 5-5
Comment refers to proposed right-of-way and temporary construction easement. The County is proposing new right-of-way as part of the project. Property ownership or transfer of ownership is not a topic considered under CEQA, as discussed in Response to Comment 3-6. The tree exhibit and utility exhibit will be revised during the right-of-way acquisition process, which occurs after the environmental review is complete.

Response to Comment 5-6
Comment noted and confirmed that most comments regarding right-of-way acquisition and transfer of property ownership will be addressed during the right-of-way acquisition process.

Letter 6: Julia Menapace

Comments re. Freestone Flat Road Bridge Replacement

Subject: Comments re. Freestone Flat Road Bridge Replacement
From: Julia Menapace [redacted]
Date: 9/8/2020, 4:27 PM
To: tpw-bridges <tpw-bridges@sonoma-county.org>

Letter 6

EXTERNAL

To whom it may concern,

Projects like the Freestone Flat Road Bridge Replacement take a long time to make their way through the planning process and develop a momentum of their own. Over the 9 years since its inception much assessment and planning has been done, but the institutional memory does not exist to recognize that the project is no longer a priority. 6-1

In addition, based on my review of the IS/MND and subsequent conversation with the project manager, the project is not as shovel ready, or as well mitigated, as it may appear.

Back in 2011 the Freestone Flat Road Bridge was identified as structurally deficient which, at the time, qualified it for Federal replacement funding. Since then major repairs were made in 2014 and additional structural improvements in 2019 The bridge was last inspected in 2014 and judged at that time to be structurally sound but not fully up to current design and safety standards. It is on the basis of the 2014 inspection that replacement is still contemplated, with even the project manager unaware of the 2019 improvements until his first site visit. 6-2

While a new bridge could be 100 percent compliant I question the necessity of that investment or its unavoidable impacts. We are talking about a currently safe and serviceable bridge on a short, lightly trafficked, dead end road. The new bridge is not anticipated to accommodate more traffic or provide improved access in the future. 6-3

While the availability of Federal replacement money may have initiated the project, additional California funding will be required to complete it. In the wake of our COVID-19 response and fighting a proliferation of wildfires our state has gone from a comfortable budget surplus to a substantial deficit. This project is not just making use of free money. 6-4

The bridge project construction will permanently impact a sensitive riparian habitat and substantially impact local residents during nearly a year of ongoing construction. In the interest of brevity I will highlight two issues not identified by bridge project management but apparent to my review of the IS/MDN. 6-5

Forty trees (including mature Oaks and Bays) must be cut to make way for constructing the new bridge in parallel to the old, and for re-routing both the road and the overhead power lines to align with the new bridge. The IS/MND states this would be mitigated by replacement tree plantings according to the Sonoma Tree Protection Ordinance. In reality the proximity of new overhead power lines prohibits any tree planting in the denuded zone. Shade cast by a new bridge is not sufficient to mitigate this impact to a sensitive riparian habitat or to the Coho, Steelhead and other species 6-6

1 of 2

spawning there.

6-6

The second issue is primarily of concern to me as the owner and resident of 1291 Freestone Flat Road, located at the West end of the bridge.

MND-13 assures:

"The contractor shall maintain access to all driveways to parcels off the project site throughout project construction."

Instead my driveway has been designated as a temporary construction easement (as shown by the Tree Impact Exhibit map.) A temporary driveway is proposed later in the report. It does not appear on any project map that I have seen. My concern is that I'm unable to visualize how its placement could possibly be implemented as described. When I asked for clarification it was not on the project manager's mental map that a temporary driveway might be required or was promised, despite co-authoring the report.

6-7

IS-13 states:

"A private driveway with an entrance gate, fencing, and stone pillars is located near the west end of the proposed bridge, near the staging area that would be used throughout construction of the project. Approximately 80 feet of driveway nearest to the roadway would be temporarily re-rerouted to create separation between the property owner access and construction operations at the new bridge location. The temporary driveway would be approximately 15 feet wide and constructed of aggregate base rock. The temporary driveway realignment is expected to be approximately 80 feet in length and **would fall within the footprint of the future location of the realigned Freestone Flat Road.** "

I was unable to obtain a site visit to discuss how this description could be implemented in the landscape as it exists with the project footprint as proposed. The gate, fencing and stone pillars are also not shown on any project map I've seen so I can only try to infer how they will be impacted by construction of the new bridge and the relocated road and power lines. The proposed new right of way itself is demarcated differently on the two supplemental maps I was able to obtain (the Tree impact exhibit and the Utility Map.)

It is clear that a significant portion of the entrance to my property would be permanently surrendered to and significantly changed by the project. I do understand eminent domain and sacrificing for the greater good but am far from convinced that this project will bring much benefit to the residents of and visitors to Freestone Flat Road.

6-8

Sincerely,
Julia Menapace

Response to Comment 6-1
Comment regarding duration of project development is noted.

Response to Comment 6-2
The Freestone Flat Road Bridge Replacement Project was initiated following the 2011 bridge inspection, in which the bridge received a sufficiency rating of 34.1 (with a maximum possible sufficiency rating of 100) and was deemed "structurally deficient." Corrective actions were taken to remediate the structural deficiency issues. The 2014 the bridge inspection report no longer lists the bridge as structurally deficient; however, the 2014 sufficiency rating for the existing bridge is 48.8 (with a maximum possible sufficiency rating of 100), which makes it eligible for replacement. Even if the bridge is no longer listed as structurally deficient, the sufficiency rating score has not been changed and indicates that the bridge does not meet current bridge design standards. The primary objective of the project is to replace the existing bridge with a new and wider structure that meets current standards. Information regarding the need of the project is provided in the Project Description of the IS/MND, Sections Need for the Project and Objectives, on page IS-6.

Response to Comment 6-3
Refer to Response to Comment 6-2 regarding the need of the project. The existing bridge does not meet current standards and is, therefore, eligible for replacement through the Highway Bridge Program.

No significant and unavoidable impacts would occur as a result of the project. As discussed in the IS/MND, the project would result in less than significant impacts on air quality, biological resources, cultural and tribal cultural resources, geology and soils, hazards and hazardous materials, noise, and transportation with mitigation measures. Environmental impacts of the project are provided in the Evaluation of Environmental Impacts of the IS/MND between pages IS-19 and IS-97.

Response to Comment 6-4
Project costs and funding are not considered environmental issues in the context of CEQA, thus the IS/MND does not analyze the effects of the project funding.

Response to Comment 6-5
Impacts on riparian habitat include 0.185 acre of temporary impact and 0.021 acre of permanent impact and are mitigated through the preparation and implementation of a Riparian Mitigation and Monitoring Plan (refer to Mitigation Measure BIO-9). A discussion of impacts on riparian habitat are provided in Environmental Impacts of the IS/MND, Biological Resources Impact (B), on page IS-59. During construction, residents may experience temporarily elevated noise levels and traffic delays. Environmental impacts of the project have been mitigated to less-than-significant levels and are discussed in the Evaluation of Environmental Impacts of the IS/MND between pages IS-19 and IS-97.

Response to Comment 6-6

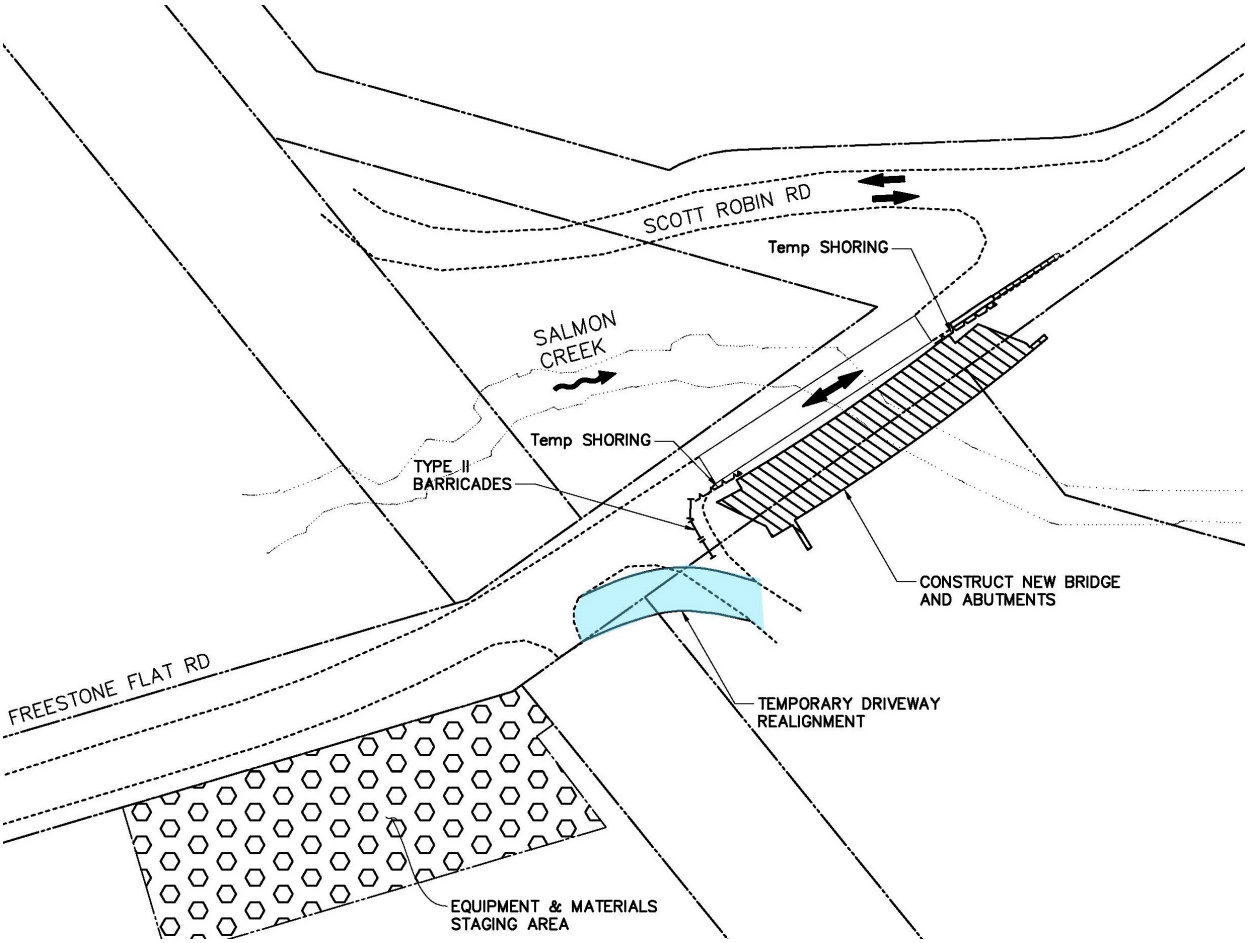
Commenter is correct that approximately 40 trees would be removed as part of the project. Trees to be removed include species identified as "protected trees" under the Sonoma Tree Protection Ordinance. Many of trees that would be removed are willows, which could be replanted in the utility corridor because the willow trees are not expected to grow to a height that would conflict with overhead utility lines. The majority of replacement tree plantings are anticipated to occur within the temporary disturbance area, including the area left vacant by removing the existing road segments. Trees may be planted in the location of the removed bridge as long as the trees would not conflict with the new bridge or safety standards. The County would prepare a Tree Replacement and Monitoring Plan (Mitigation Measures BIO-13) to identify the locations of tree replacement. Where it is not feasible to replant the total number of trees required on the project site due to size constraints or repeated failure to thrive, the County may replant a selected number of trees off-site or make in-lieu payment fees in accordance with the terms of the Tree Protection Ordinance.

The IS/MND addresses impacts on sensitive habitats and species, including impacts to Coho salmon, steelhead, and other sensitive species, in Biological Resources Impacts (A) and (B), between pages IS-51 and IS-59. Half of the existing, narrow bridge is constructed of a steel grate deck that allows sunlight to pass through the bridge deck and to the creek below. Construction would occur during the dry season when the creek flow is low and there is low potential for protected aquatics species to occur in the project site. Shade on the creek would be temporarily reduced due to removal of trees within the footprint of the new bridge; however, construction of the new bridge would replace the shade lost from tree removal. Additionally, Mitigation Measure BIO-9: Riparian Mitigation and Monitoring Plan would ensure that trees removed from the creek banks are replaced. The new bridge and replaced trees would mitigate effects of reduced shade on riparian habitat and sensitive fish species identified by the commenter. Impacts on Coho salmon, steelhead, and other special-status species, and riparian habitat are provided in the Environmental Impacts section of the IS/MND, Biological Resources Impacts (A) and (B), between pages IS-51and IS-59.

Response to Comment 6-7

Figure 5 (page IS-9) included in the Project Description of the IS/MND identifies the proposed project elements, including a staging area, temporary work area, realigned road segments, and new and existing bridges. The realigned road segment shown in Figure 5 also shows the post-construction alignment of the private driveway to 1291 Freestone Flat Road. A discussion of the temporarily re-routed driveway for access to 1291 Freestone Flat Road is discussed on page IS-14. The purpose of the tree removal exhibit, included in Appendix E, is to identify the trees potentially removed during project construction and does not include all temporary construction elements, such as the temporary driveway realignment. A diagram of the temporary driveway relocation, as proposed in the 65% engineering design, is included below. Minor modifications to the temporary driveway realignment could occur during the final engineering design and right-of-way negotiations with the property owner.

Figure F-1 Temporary Driveway Relocation



The existing gate located on the driveway of 1291 Freestone Flat Road is located at the southernmost extent of the temporary driveway realignment, as shown in the 65% engineering design. Impacts to the gate, fence, and stone pillars are possible and discussed in Response to Comments 3-5 and 3-17. The temporary driveway realignment would be established prior to construction commencement. Specific modification to the existing fence, gate, and stone pillars to accommodate the temporary driveway would be determined during the final design of the project and in coordination with the property owner.

Response to Comment 6-8

The comment regarding loss of property and modification of the entrance to 1291 Freestone Flat Road is noted.

Letter 7: Bo Schertz

From: John Leong <John.Leong@sonoma-county.org>
Date: 9/22/2020, 9:05 AM
To: tpw-bridges <tpw-bridges@sonoma-county.org>

Letter 7

Forwarding copy of response from September 17, 2020 at 6:40 pm to the tpw-bridges mailbox.

From: tpw-bridges
Sent: Thursday, September 17, 2020 6:40 PM
To: 'Bo Schertzer' [redacted]
Subject: RE: Freestone flat road bridge

We received this e-mail and an identical message to another inbox. Another colleague and I are potentially visiting the Freestone Flat project site next Wednesday, September 23, 2020 in the morning with an estimated time still to be determined.

-John

From: Bo Schertzer [redacted]
Sent: Wednesday, September 16, 2020 5:03 PM
To: tpw-bridges <tpw-bridges@sonoma-county.org>
Subject: Freestone flat road bridge

EXTERNAL

Hi John,

My name is Bo and my family owns the negri property in freestone and just received all the plans for the new bridge from a neighbor. I'm a contractor myself and would love to hear why we haven't heard anything about this, especially when you guys want to use our property as an easement and staging area? Feel free to email, call me at [redacted] or meet in person on our property to discuss details. 7-1

Thank you for your time, Bo

Sent from Yahoo Mail on Android

Response to Comment 7-1

Pursuant to California Environmental Quality Act Section 15072, a Notice of Intent to adopt the project IS/MND was circulated for public review for a 32-day period from August 7, 2020 to September 8, 2020. The draft IS/MND and Notice of Intent were posted on the project website at https://sonomacounty.ca.gov/TPW/Roads/Projects/Freestone-Flat-Road-Bridge-Replacement-(C11004)/ during the public review period.

Environmental Review Committee Comments

ERC Comment 1

Stream crossings shall be designed and constructed in compliance with the Flood Management Design Manual, or superseding document, for no less than the 100-year design discharge and include a minimum clearance from soffit to design water surface of one (1) foot.

Response to ERC Comment 1

The Project has been designed to comply with the Flood Management Design Manual for the 100-year design discharge. The bridge design also exceeds the minimum soffit clearance requirements. Edits have been made to the project description to clarify how the bridge design meets the recommended design requirements related to 100-year flood design. Refer to the discussion under the "Drainage" heading on page IS-13. Project impacts related to impediment or redirection of flood flows are included under Impact Hydrology C) iv) on page IS-76. No modification to Impact Hydrology C) iv) is necessary.

> **Drainage**
>
> The proposed Project has been designed to comply with the Sonoma County Flood Management Design Manual for the 100-year design discharge and Low Impact Development (LID) requirements identified by the City of Santa Rosa Low Impact Development Technical Design Manual and City of Santa Rosa Storm Water Calculator (City of Santa Rosa, 2021; Sonoma County, 2020). The project will utilize dikes and superelevation to capture stormwater runoff for all new and reconstructed pavement area. Flows will be directed to four different bioretention basins consisting of biofiltration media underlain with class 2 permeable base and a 6-inch diameter perforated pipe underdrains (Quincy Engineering, 2022).
>
> ~~The existing drainage patterns along Freestone Flat Road and Scott Robin Road would be maintained. Currently drainage runoff sheet flows from the roadways into shallow and flat roadside ditches.~~ An existing drainage pipe under Scott Robin Road relieves water from the north side and outfalls along the northern embankment of Salmon Creek. The project may include improvements (if necessary) to replace the existing drainage pipe (with high-density polyethylene or reinforced concrete pipe) and extend the inlet end while maintaining the existing outfall location. ~~The gradient for drainage of roadway and bridge surfaces near Salmon Creek would be sufficient to maintain current patterns and flow away from the roadway and bridge along their natural course.~~

ERC Comment 2

Drainage patterns and runoff. Construction grading and drainage shall be designed and constructed to maintain natural and existing drainage patterns. Post-development stormwater runoff shall not exceed pre-development stormwater runoff using the calculation methodologies in the Storm Water Low Impact Development Technical Design Manual, or superseding document, or equivalent calculation methodologies.

Response to ERC Comment 2

The Project has been designed to satisfy post-development stormwater runoff requirements identified in the Storm Water Low Impact Development Technical Design Manual. The proposed design will maintain the existing drainage pattern; however, the new bridge will be larger than the existing bridge, resulting in increased stormwater runoff. Low impact development improvements incorporated into the project design include, dikes and superelevation, rock-lined drains, bioretention basins, and rock slope protection at stormwater outfall locations. Refer to the discussion under the "Drainage" heading on page IS-13 (excerpt provided above) and Impact C) i) through iii) on page IS-75 and IS-76.

> **C) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would:**
>
> **i) result in substantial erosion or siltation on- or off-site;**
>
> **Less Than Significant Impact.** The existing pier columns would be cut off at or above the ordinary high-water elevation and remain in place in Salmon Creek. The removal of this portion of the pier columns would not alter the drainage of the creek. The installation of new abutments and removal of the existing abutments would occur outside of the ordinary high-water mark and would not substantially alter the drainage of Salmon Creek. The existing piles and abutments would be removed and other activities would occur during construction, which could result in a temporary increase in siltation. LID stormwater improvements, including bioretention basins, rock-lined drains, and rock slope protection at stormwater outfall locations would involve minimal modification to ~~The~~ drainage patterns along the reconstructed segments of Freestone Flat Road and Scott Robin Road and would result in decreased erosion and siltation on and off site. ~~would remain the same as existing conditions.~~
>
> The potential for construction activities along the banks of Salmon Creek to result in erosion and siltation of Salmon Creek is analyzed under Impact A). The project would not alter drainage patterns in a manner that could result in substantial erosion and siltation. The impact would be less than significant.
>
> **ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;**
>
> **Less Than Significant Impact.** The drainage patterns along Freestone Flat Road and Scott Robin Road would be modified to utilize dikes and superelevation to capture stormwater runoff and ensure that post-project runoff does not exceed pre-project runoff. The project would maintain overall drainage patterns in the project area and would not contribute to flooding on or off site. ~~remain the same as existing conditions. Drainage from the proposed bridge would sheet flow into Salmon Creek, similar to existing conditions.~~ The project would increase impermeable surfaces by 0.19 acre as a result of the paved roadway approaches and proposed bridge. The increase in impervious surfaces would be negligible compared to the 5 square-mile subwatershed

and the 35 square-mile Salmon Creek watershed. The peak 100-year flow at the project site would not increase significantly due to the increase in impervious surfaces (WRECO, 2018).

The potential removal of the existing pier columns and increase in impervious surfaces would not substantially change drainage patterns in a manner that could result in flooding. The impact would be less than significant.

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

Less Than Significant Impact. ~~Similar to existing conditions, project runoff would drain directly into Salmon Creek from the new bridge and into outlets into the creek from the roadway approaches.~~ ~~Improvements to the existing roadway drainage infrastructure would be made if necessary.~~ The project is located in a rural setting where stormwater sheetflows from the existing Freestone Flat Road and Scott Robin Road to roadside drainage ditches or directly into Salmon Creek. No existing or planned municipal stormwater drainage systems would be impacted by the project. The project would increase impervious surfaces by 0.19 acre; however, the small increase would not contribute additional substantial sources of polluted runoff. LID stormwater improvements, including dikes, superelevation, and bioretention basins, have been incorporated into the project design to ensure that post-project stormwater runoff does not exceed pre-project runoff. Bioretention basins will treat stormwater discharge on site, reducing pollutants in runoff that leaves the project site. The potential for construction activities to impact water quality, including from polluted runoff, is analyzed under Impact A). The impact would be less than significant.

ERC Comment 3

Construction grading and drainage shall be designed to limit post-development soil and other pollutant discharges to pre-development levels in compliance with the department's best management practices for construction grading and drainage.

Response to ERC Comment 3

The existing bridge deck consists of a steel grate, which allows direct discharge into the creek. The Project design includes low impact development improvements to treat stormwater runoff before entering the creek. Additionally, the Project requires implementation of best management practices (BMPs) and revegetation of temporarily disturbed areas to ensure that post-development pollutant discharge does not exceed pre-development soil and pollutant discharge. Refer to the discussion under the "Drainage" heading on page IS-13 and Impact C) on page IS-75 and IS-76.

ERC Comment 4

It is unlawful to remove ACTIVE nests. Mitigation needs to be deleted and bridge should be netted or a monitor needs to remove inactive nests daily.

Response to ERC Comment 4

Mitigation Measure BIO-7 in the publicly circulated IS/MND includes installation of netting to deter nest construction on the bridge outside of the nesting season and/or weekly removal of partially constructed and inactive nests. The measure has been revised to include removal of inactive nests daily, per ERC comments. Refer to Mitigation Measure BIO-7 on page IS-56.

> **Mitigation Measure BIO-7: Discourage Bird Nesting on Bridge**
>
> To discourage bird nesting on the existing bridge during construction, existing inactive bird nests on the Freestone Flat Road Bridge shall be removed prior to the onset of construction, between September 1 and February 14 (outside of the nesting season). Following removal of inactive nests, nest deterrent measures shall be installed on the existing bridge to prevent establishment of new nests. Techniques to prevent nest establishment include using exclusion devices (see below), removing and disposing of partially constructed and unoccupied nests of migratory or nongame birds on a regular basis to prevent their occupation, or performing any combination of these techniques.
>
> - *Exclusion Device:* Install bird netting from the bridge prior to start of nesting season (i.e. before February 15). If this technique is used, netting shall be in place from mid-February until the bridge is removed. If a nesting deterrent is used, the deterrent shall be monitored for integrity and effectiveness until the bridge is removed.
> - *Nest Removal*. Starting before the nesting season (i.e., prior to February 15), the County or its contractor shall visit the site ~~weekly~~ daily and remove partially completed nests on the bridge using either hand tools or high pressure water. Disturbance or removal of active nests (i.e., nests containing eggs or young) shall not be conducted without the appropriate authorization(s) from the Service and/or the CDFW.
>
> If nests cannot be removed prior to the nesting season (i.e., before February 15), a qualified biologist shall determine if nests are inactive and can be removed before construction begins without disturbing nesting activity. If active nests are identified, construction in the vicinity of the bridge may need to be postponed until nests are determined by a qualified biologist to be inactive or the Service and/or CDFW authorizes the removal of active nests. An effective deterrent to bird nesting shall be installed on the bridge once the nests are removed.

ERC Comment 5

Remove pile driving for the IS entirely.

Response to ERC Comment 5

Pile driving has been removed entirely from the IS.

The edited text on page IS-15 appears below:

At both abutments, installation equipment would be located south of the existing approach roadways within the temporary work area and would avoid the creek channel. ~~Signage, flagmen, and temporary K-rails would be used to maintain traffic during sheet pile driving operations.~~

The edited text on page IS-50 appears below:

Construction equipment~~, particularly pile drivers,~~ generate vibration and noise. Construction equipment noise and vibration could affect special-status fish if special-status fish were to occur in Salmon Creek at the time of construction.