**Sonoma County Public Infrastructure**
**Johannes J. Hoevertsz, Director**
**Monique Chapman, Deputy Director – Administration**
**Keith Lew, Deputy Director – Facilities Development & Management**
**Trish Pisenti, Deputy Director – Transportation, Operations & Fleet**
**Janice Thompson, Deputy Director – Engineering & Maintenance**

2300 COUNTY CENTER DRIVE, SUITE A220, SANTA ROSA, CA 95403 ❖PH: 707.565.2550 ❖FAX: 707.565.3240

# *NOTICE OF CATEGORICAL EXEMPTION*

Sonoma County proposes to carry out the following Roads to Restoration Paving Project (project). It has been determined that this project is categorically exempt from the requirements of the California Environmental Quality Act (CEQA):

**Project Title:** Roads to Restoration Project
**Lead Agency / County Agency of Filing:** Sonoma County
**Project Proponent (Applicant):** Sonoma County Public Infrastructure
**Applicant Address:** 2300 County Center Drive, Suite A220, Santa Rosa, CA 95403
**Project Location:** Sonoma County
**Date of Approval:** TBD
**Exemption Filed With:** Sonoma County Clerk

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**PROJECT DESCRIPTION:**

Sonoma County (County) Public Infrastructure will perform maintenance on existing paved roadways. The project is focused on core maintenance of 12 existing distinct road segments throughout Sonoma County (Appendix A). Work will include maintenance both within the road and within adjacent roadside ditches and culverts. The proposed work activities include full-depth reclamation or slurry seal (i.e., paving), roadside ditch maintenance, culvert replacement, and guardrail installation, or some combination of each of these activities depending on the road segment (Appendix A – Mapbook). Maintenance activities also include clearing excess sediment, vegetation, and debris from roadside ditches. Not all activities will be performed at each road segment. Staging areas will be determined by the construction contractor hired by the County and will likely be located within the existing roadway or road shoulder that were previously and are currently disturbed. The project construction controls would include enviromentally senstive area fencing on roads with cultural and biological resources. Table 1 generally identifies the proposed maintenance activities to be performed at each of the 12 distinct road segments. Details of each maintenance activity are provided below.

Urban roadways include Santa Rosa Avenue, Woodward Avenue, Corona Road, Lichau Road, Bloomfield Road, Petaluma Hill Road, King Road, and Casa Grande Road. These roadways are primarily agricultural land uses with residential or commercial properties scattered throughout, and the topography varies from flat to gently rolling slopes. Rural roadways include Fort Ross Road, Morelli Lane, Sonoma Mountain Road, and Nuns Canyon Road. These roadways are located within the foothills of Sonoma County, vary from moderate to steeply sloped, and are surrounded primarily by rural residential, agricultural, and open space land uses.

**Table 1. Proposed Repair Activities by Road Segment**

| Road Segment and Location | Proposed Activities | | | |
|---|---|---|---|---|
| | **Paving** | **Ditch Maintenance** | **Culvert Replacement** | **Guardrail Installation** |
| Bloomfield Road<br>Spans approximately 1 mile from intersection of Tremari Road to intersection of Valley Ford Road | Full-depth reclamation (FDR) from Valley Ford Road to Tremari Road (Postmile [PM] 10.00–PM 11.06) | Sediment removal along 6 segments | N/A | N/A |
| Casa Grande Road<br>Spans approximately 0.62 mile from intersection of Adobe Road to approximately 350 feet north of intersection of Allen Street | FDR/overlay from Petaluma City Limits to Adobe Road (PM 10.81–PM 11.44) | Sediment removal along 2 segments | N/A | Install metal beam guardrail along both sides of road at PM 10.837 to PM 10.862 and PM 11.150 to PM 11.209 |
| Corona Avenue<br>Spans approximately 500 feet from intersection of Petaluma Boulevard to Petaluma River bridge crossing | Overlay from Petaluma Boulevard north to end of County-maintained roadway (PM 9.98—PM 10.06) | N/A | N/A | N/A |
| Fort Ross Road<br>Spans approximately 1.3 miles from intersection of Niestrath Road to driveway of Black Mountain Camp | Overlay from Niestrath Road to Black Mountain Camp (PM 15.48—PM 16.76) | Sediment removal from PM 16.718 to PM 16.750 | Culvert replacements at 9 locations between PM 15.694 and PM 16.640 | N/A |
| King Road<br>Spans entire 1.6-mile length of King Road from intersection of Pepper Road to intersection of Bodega Avenue | FDR from Bodega Avenue to Pepper Road (PM 10.00—PM 11.55) | Sediment removal along 43 segments | Culvert replacements at PM 10.384 and PM 10.550 | N/A |
| Lichau Road<br>Spans approximately 0.75 mile from intersection of Roberts Road to approximately 0.2 mile west of Cold Springs Road | FDR from Roberts Road to PM 12.09 | N/A | N/A | N/A |
| Morelli Lane<br>Spans approximately 2 miles from intersection of Harrison Grade Road to intersection of Bohemian Highway | FDR from Bohemian Highway to Harrison Grade Road (PM 10.00—PM 11.91) | N/A | Culvert replacements at PM 10.425, PM 10.494, PM 10.643, PM 10.809, PM 10.993 | Install metal beam guardrail along both sides of road at PM 10.690 to PM 10.698 |
| Nuns Canyon Road<br>Spans approximately 1 mile from intersection of Sonoma Highway (State Route [SR]-12) to Calabazas Creek bridge crossing | FDR/overlay, add paved turnouts where possible from SR-12 to end of County-maintained roadway (PM 9.99—PM 11.03) | Sediment removal along 3 segments | Culvert replacements at PM 10.000 and PM 10.708 | Install metal beam guardrail at PM 10.009 |
| Petaluma Hill Road<br>Spans approximately 1.3 miles from intersection of Crane Canyon Road to intersection of Rohnert Park Expressway | Shoulder repairs from Rohnert Park Expressway to Crane Canyon Road (PM 13.65—PM 14.98) | N/A | N/A | N/A |

| Road Segment and Location | Proposed Activities | | | |
|---|---|---|---|---|
| | Paving | Ditch Maintenance | Culvert Replacement | Guardrail Installation |
| Santa Rosa Avenue<br>Spans approximately 2.1 miles from intersection of Bellevue Avenue to where Santa Rosa Avenue becomes Roberts Lake Road | Restripe from Roberts Lake Road to Bellevue Avenue (Santa Rosa City Limits) (PM 10.01—PM 12.09) | N/A | N/A | N/A |
| Sonoma Mountain Road<br>Spans approximately 1.15 miles from intersection of Sonoma Ridge Road to intersection of Mountain Meadows Lane | Full depth reclamation from Sonoma Ridge Road to Mountain Meadow Lane (PM 23.25—PM 24.41) | Sediment removal along 5 segments | Culvert replacements at PM 23.572 and PM 24.141 | Install metal beam guardrail at PM 23.729 to PM 23.756 |
| Woodward Avenue<br>Spans entire 0.37-mile length of Woodward Avenue from intersection of Main Street to intersection of Adobe Road | Overlay from Main Street to Bannon Lane (PM 10.00—PM 10.38) | N/A | N/A | N/A |

## Repaving

Repaving activities will occur in 11 of the 12 road segments, with one road segment to be restriped only. Depending on the needs of the particular road segment, these activities may include full-depth reclamation (FDR) or overlay. These methods are described below. All repaving activities will occur completely within the existing roadway and shoulders.

## Full-Depth Reclamation

FDR is an in-place pavement recycling method for reconstruction of existing pavements using the existing pavement section material as the base for the new roadway surface. This method is appropriate for road segments in which the grade contours need to be restored or where there is deeper damage to the existing pavement. In FDR, the full depth of the existing pavement (typically 4–12 inches) is broken, pulverized, and mixed with a recycling agent. This process can include adding chemicals to the base layer to increase its strength capacity. The treatment of the base layer and recycled asphalt provides a stronger foundation for present and future traffic. Equipment may include a motor grader or dozer with either front- or rear-mounted ripper teeth and steel wheel rollers.

For roads that require FDR, the asphalt concrete will be replaced at existing cross culverts with under 2 feet of existing cover. Asphalt concrete surfacing and aggregate base material will be removed to a depth of 0.5 feet across the entire width of the culvert, including 0.5 feet on either side plus an additional 3-foot minimum on both sides. The asphalt concrete will be replaced with 0.5-foot full-depth asphalt concrete prior to overlay.

## Overlay

An overlay is a method in which a new layer of asphalt is placed on top of the existing asphalt pavement surface. This method is appropriate for existing pavement that is in stable condition with no major repairs or replacement needed. The overlay is typically 1 to 3 inches thick and has structural strength. The existing pavement is ground down (milled) before resurfacing so asphalt will not build up at the edge. Equipment may include a milling machine, sweeper, and dump trucks.

Restriping

Restriping is a minimally invasive process of applying a reflective, thermoplatic striping material to the road surface to improve visibility of the lane dividers. The exiting, degraded striping on the road surface will first be ground down to remove the old paint. Then the new striping will be applied with an extruder.

Shoulder Repairs

Shoulder repair will involve removing asphalt concrete from the edge of the travel way to the edge of the paved surface to a depth of 6 inches, recompacting of the base material, and replacing the asphalt concrete.

Pave Turnouts

Various roadside turnouts will be paved by removing shoulder material, adding aggregate base, and lifting asphalt concrete.

Ditch Maintenance

Ditch maintenance will occur in six road segments. This maintenance will occur in two steps: 1) clearing and grubbing roadside ditches, and 2) regrading the ditches to reestablish proper drainage. For road segments where ditch maintenance will co-occur with repaving activities, the ditch maintenance will be conducted first.

During the clearing and grubbing activities, excess sediment, vegetation, and debris will be cleared from roadside ditches to expose the existing edge of pavement. When excavating within the root zones of trees, care will be taken to minimize damage to the tree root system. All roots 1 inch in diameter or greater exposed during excavation will be cut cleanly by hand at the surface of the excavation. Roots will be cut as they are exposed until the finish grade of the excavation is reached. All existing vegetation outside the areas to be cleared and grubbed will be protected from injury or damage. The limits of clearing and grubbing will extend approximately 10 feet from the edge of the pavement or to the back of the existing ditch, whichever is greater. Equipment may include mechanical brush cutters and mowers.

Ditch regrading will consist of clearing all sediment to expose inverts[1] of existing driveway culverts and reestablish ditch flowlines. In addition, ditches will be reshaped to match the culvert diameter; the depth will vary depending on the existing culvert depth. Equipment may include a skid steer loader.

Culvert Replacement

In five road segments, culverts will be replaced in-kind (five culverts) or with larger-capacity corrugated metal pipe culverts (15 culverts). New rock slope protection (RSP) will be installed for velocity dissipation at some culvert inlets and outlets. New concrete or RSP headwalls will be installed at fewer inlets and outlets.

Traffic mat (shallow culverts) installation procedures shall include methods to prevent flotation of the pipe (36 inches maximum) and maintain a minimum of 6 inches cover. If cover is 1 foot or less, a 4-inch rebar traffic mat is placed 18 inches on-center both ways, with a minimum of 3 inches of cover above the rebar.

Postmile marker placement (culvert repair) shall include marker placement at cross culverts a minimum of 2 feet off the edge of the pavement and a minimum of 4 feet before the culvert. Each culvert will receive two markers, one for each direction of travel.

[1] An invert is the lowest point of the inside-bottom of a culvert.

Guardrail Installation

In four road segments, metal beam guardrails will be replaced along one or both sides of the roads. The new guardrail posts will be installed in the same holes from which the old posts were removed.

Access and Staging

Staging areas will be determined by the construction contractor and will likely be located within existing disturbed areas (e.g., the roadway or road shoulder).

**BIOLOGICAL RESOURCES:**

A Biological Resources Evaluation (BRE) was completed to assess potential impacts to biological resources from the proposed project and is included as Appendix B to this document. The project includes maintenance activities that would be limited to existing roads and culverts; therefore, although it would be unlikely to impact surrounding habitat, including sensitive natural communities, the project could affect species that depend on that habitat. The BRE identified Avoidance and Minimization Measures (AMM) that would be implemented as part of the project to avoid impacts to biological resources (Appendix B). General measures AMM-1a through AMM-1j would train workers to recognize and avoid biological resources; avoid wildlife; reduce wildlife mortality due to vehicle collisions; protect waterways from spills, dirt, and debris; limit work areas, access routes, and staging areas; ensure good housekeeping; and prohibit pets.

The BRE identified 14 potential special-status plants that could be impacted by project activities. The project would perform botanical surveys for the identified species during the appropriate flowering period. If special-status plant species are observed within the project area during these surveys, individuals will be flagged and avoided by construction as described in AMM-2a.

The maintenance project may have the potential to impact several amphibian species, including California tiger salamander, California red-legged frog, California giant salamander, foothill yellow-legged frog, and red-bellied newt during construction. Table 8 of Appendix B includes the road segments where amphibians are likely to occur. The project would not create any new barriers that would prevent dispersal of amphibians. Implementation of AMM-3a through AMM-3f would minimize the potential for impacts to special-status amphibians during maintenance activities.

There is potential for coho salmon and steelhead to occur within the footprint of the Fort Ross Road work area. Culvert replacement activities along Fort Ross Road may temporarily impact anadromous fish and their habitat, including impacts to water quality as well as the creation of temporary movement barriers. Potential impacts that may occur as a result of in-water work would be avoided with implementation of AMM-4a through AMM-4d. Project activities are not expected to directly impact steelhead stream habitat along other work areas.

Northern spotted owl has potential to occur within Douglas-fir, redwood, and montane hardwood-conifer forest habitats present along Fort Ross Road, Morelli Lane, Sonoma Mountain Road, and Nuns Canyon Road. No trees will be removed and all maintenance work would remain in previously disturbed areas. Disturbance due to noise, dust, or vibration from construction equipment may result in nest abandonment if nesting northern spotted owl are present within the vicinity of any of the project work areas during construction. AMM-5a, which will limit ambient noise levels during the northern spotted owl breeding season, would avoid impacts to any potential nesting northern spotted owls.

The project area contains suitable nesting and foraging habitat for special-status birds species, including tricolored blackbird, saltmarsh common yellowthroat, and white-tailed kite, as well as other avian species. Under AMM-6a, preconstruction nesting surveys would be implemented to minimize any impacts to nesting birds that may occur in the project area.

The project could impact nesting birds in the vicinity of maintenance activities due to noise, dust, or vibration from construction equipment. AMM-6a would require preconstruction nesting surveys, which would minimize the potential for impacts to nesting birds.

**CULTURAL RESOURCES:**

A Cultural Resources Analysis memorandum (CRA) was completed to assess potential impacts to cultural resources from the proposed project. The CRA included a records search requested from the California Historical Resources Information System (CHRIS) Northwest Information Center (NWIC) at Sonoma State University in Rohnert Park, California, followed by an archaeological field survey and built environment survey by SWCA Environmental Consultants (SWCA) staff. In addition, SWCA requested a records search from the California Native American Heritage Commission (NAHC) for traditional cultural records and contacted representatives of local Native American tribes.

Archaeological Resources

The records search revealed two known resources that potentially cross the project area in the vicinity of Bloomfield Road and Petaluma Hill Road. Both sites were surveyed and it was determined that neither site crosses the project area. Therefore, there would be no impacts to known archaeological resources.

Historical Resources

Eleven of the road segments were constructed over 45 years ago, which serves as the informal age threshold for identifying historical resources. In instances where the roadways exhibited such extensive alterations that they would not retain any historical integrity specific to their period of construction, further evaluations were not conducted. Preliminary California Register of Historical Resources (CRHR) evaluations of Bloomfield Road, Casa Grande Road, Fort Ross Road, King Road, Morelli Lane, and Sonoma Mountain Road were made, and they were each found to be not eligible for the CRHR under any of the four criteria. Nuns Canyon Road, which had been previously recorded but not evaluated, was surveyed and evaluated and similarly found to be not eligible for the CRHR under any of the four criteria. Therefore, there would ne no impacts to historical resources.

Tribal Cultural Resources

The Kashia Band of Pomo Indians of the Stewarts Point Rancheria expressed that the portion of the project area along Fort Ross Road is within the boundary of their ancestral homeland, and a number of tribal resources occur along this route. The tribe requested spatial data of the proposed work area and recommended that a tribal site visit be conducted before the commencement of the proposed activities and a tribal monitor be present for any proposed ground-disturbing work within identified sensitive areas along the road.

Previously Undiscovered Cultural Resources

SWCA finds that the proposed project will have a less-than-significant impact to cultural resources under CEQA with the implementation of regulatory compliance measures related to the inadvertent discovery of archaeological resources and human remains.

Although no archaeological resources were noted on the ground surface during the pedestrian survey, the possibility of encountering cultural resources during excavation remains. If cultural materials are uncovered during project work, the Inadvertent Discovery Procedures noted below should be followed.

In the event that unanticipated cultural resources are exposed during disturbance activities, work within 15 meters (50 feet) of the find must stop and a Secretary of the Interior (SOI)-qualified archaeologist (SWCA Project Manager Christina Alonso [925-399-9220]) must be notified immediately. Work may not resume until a qualified archaeologist can evaluate the significance of the find; however, disturbance activities may continue in other areas. If the discovery proves significant, additional work such as archaeological testing, data recovery, or consultation with stakeholders may be warranted.

The discovery of human remains during the course of the project is a possibility. If human remains are encountered, then the procedures outlined by the NAHC, in accordance with California Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98, would be followed. If the monitor determines that a discovery includes human remains:

1. All ground-disturbing work within the immediate vicinity (25 feet) of the find would halt.
2. The archaeologist would contact the County Coroner:

   Sonoma County Coroner
   3336 Chanate Road
   Sonoma, California 95404
   Phone: (707) 565-5070

3. As a courtesy, the County Coroner would also notify the NAHC:

   Native American Heritage
   Commission 915 Capitol Mall, Room
   364 Sacramento, California 95814
   Phone: (916) 373-3710
   Email: nahc@nahc.ca.gov

The County Coroner would have 2 working days to examine the remains after being notified in accordance with California Health and Safety Code Section 7050.5. If the County Coroner determines that the remains are Native American and are not subject to the County Coroner's authority, the County Coroner has 24 hours to notify the NAHC of the discovery. The NAHC would immediately designate and notify the Native American Most Likely Descendant (MLD), who will have 48 hours after being granted access to the location of the remains to inspect them and provide recommendations for the treatment of them.

**HAZARDOUS MATERIALS:**

Databases held by the California Department of Toxic Substances Control (DTSC; Envirostor) and the State Water Resources Control Board (SWRCB; Geotracker) were consulted for the presence of any known hazardous materials sites. There are no active hazardous materials sites in the vicinity of the proposed project.

**REASON WHY THIS PROJECT IS EXEMPT:**

CEQA Statute Section 21084 – Categorical Exemptions

Article 19 of CEQA (State CEQA Guidelines Sections 15300–15333) includes a list of classes of projects that have been determined not to have a significant effect on the environment and, as a result, are categorically exempt from review under CEQA.

The project is categorically exempt per State CEQA Guidelines Section 15301 (Existing Facilities), Section 15302 (Replacement or Reconstruction), and Section 15304 (Minor Alterations to Land). Class 1 consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration to existing public or private structures, facilities, mechanical equipment, or topographical features involving negligible or no expansion of existing or former use. Class 2 consists of replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced. Class 4 consists of minor public or private alterations in the condition of land, water, and/or vegetation that do not involve removal of healthy, mature, scenic trees except for forestry or agricultural purposes.

According to State CEQA Guidelines Article 19, a project does not qualify for a Categorical Exemption if it falls under one or more of the following exceptions:

***State CEQA Guidelines Section 15300.2. Exceptions to Categorical Exemptions***

*(a) Location. Classes 3, 4, 5, 6, and 11 are qualified by consideration of where the project is to be located--a project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant. Therefore, these classes are considered to apply in all instances, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.*

*(b) Cumulative Impact. All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.*

*(c) Significant Effect. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.*

*(d) Scenic Highways. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway. This does not apply to improvements which are required as mitigation by an adopted negative declaration or certified EIR.*

*(e) Hazardous Waste Sites. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.*

*(f) Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.*

The proposed project would provide maintenance on existing roadways and adjacent culverts and would replace several culverts. The project does not propose the removal of any trees.

*Location.* (Applicable to Class 4, but not to Classes 1 and 2) The project would perform maintenance activities on roads and adjacent ditches and culverts; therefore, it would not be located in a particularly sensitive environment. As discussed above, the BRE for the project determined that any potential impacts to biological resources would be reduced to less-than-significant levels with the inclusion of AMM-1 through AMM-6 (see Appendix B).

*Cumulative Impact.* The project would include maintenance of roads and culverts, including replacing some culverts and guardrails. The project would not result in environmental impacts, nor increase the capacity of roadways or culverts; therefore, this project would not contribute cumulatively to cumulative impacts.

*Significant Effect.* The project includes standard maintenance of roads and culverts and does not include "unusual circumstances" that could cause a significant effect.

*Scenic Highways.* The project would include maintenance activities on Nuns Canyon Road adjacent to State Route 12, which is a State Scenic Highway. In addition, there is one County scenic corridor (Sonoma Mountain Road) within the list of streets being improved. The project would not result in damage to scenic resources but would provide a slight beneficial impact to the corridors by repaving the roadway, replacing two culverts, installing new guardrails, and removing sediment from roadside ditches, thus improving the quality of the scenic corridor.

*Hazardous Waste Sites.* The project would take place within the roadways and culverts and does not contain a listed hazardous waste site.

*Historical Resources.* No known archaeological resources or historic properties will be adversely affected. The County will work with the Kashia Band of Pomo Indians of the Stewarts Point Rancheria to avoid impacts to potentially sensitive tribal cultural resources adjacent to the construction areas along Fort Ross Road. The project would include environmentally sensitive area fencing as a construction control to ensure that areas adjacent to the roadways containing biological and cultural resources are protected.

Therefore, there are no exceptions to the exemptions, and the project would have no adverse effect on the environment.

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This Notice of Exemption is filed pursuant to the provisions of Section 15062 of the State CEQA Guidelines.

**Project Proponent:**

Hunter McLaughlin
Assistant Engineer
Sonoma County Public Infrastructure
(707)565-1757

# Appendix A

# Mapbook

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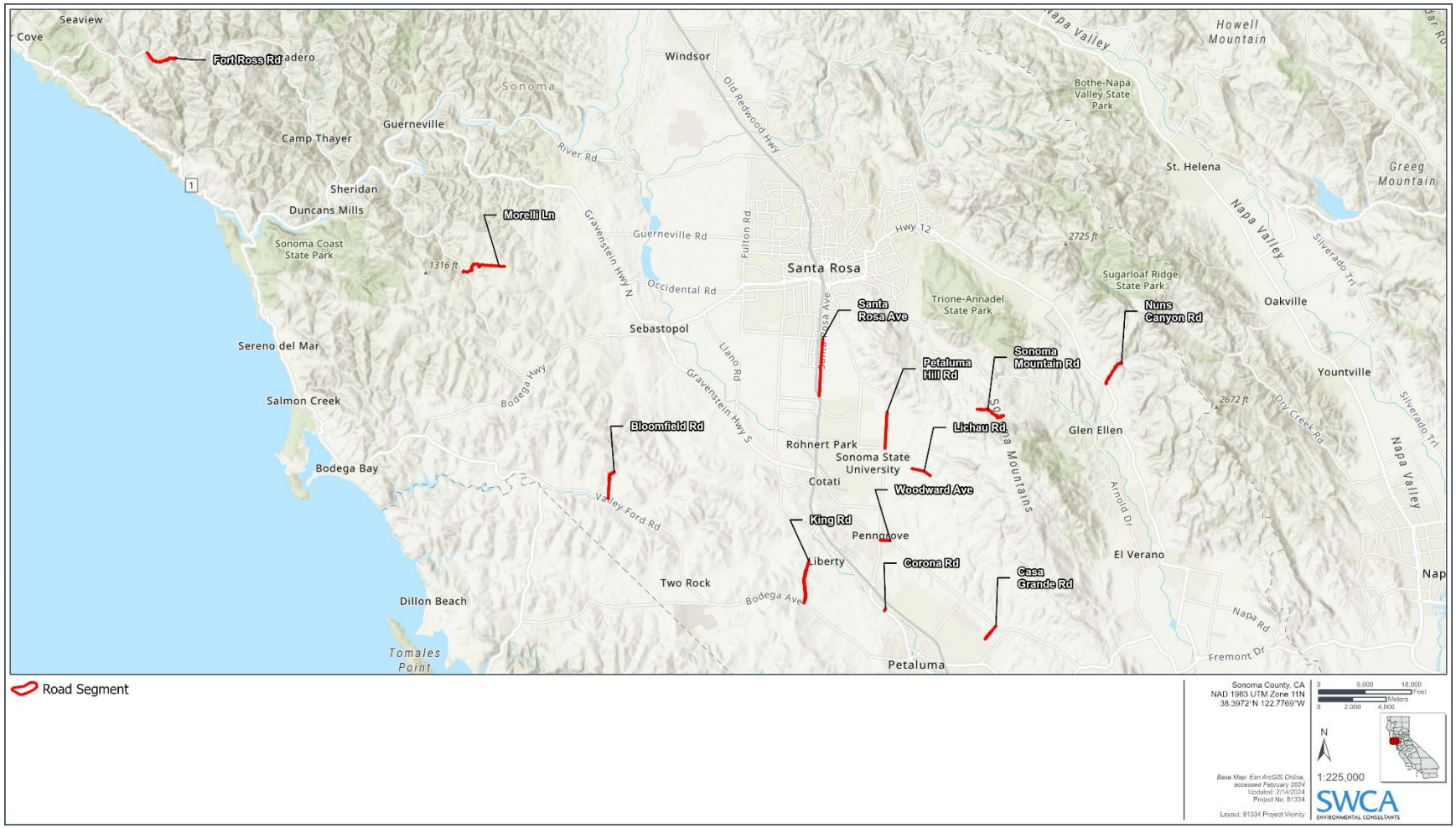


**Figure 1. Project Location Map**

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**Figure 1-A. Bloomfield Road**


**Figure 1-B. Casa Grande Road**


**Figure 1-C. Corona Road**

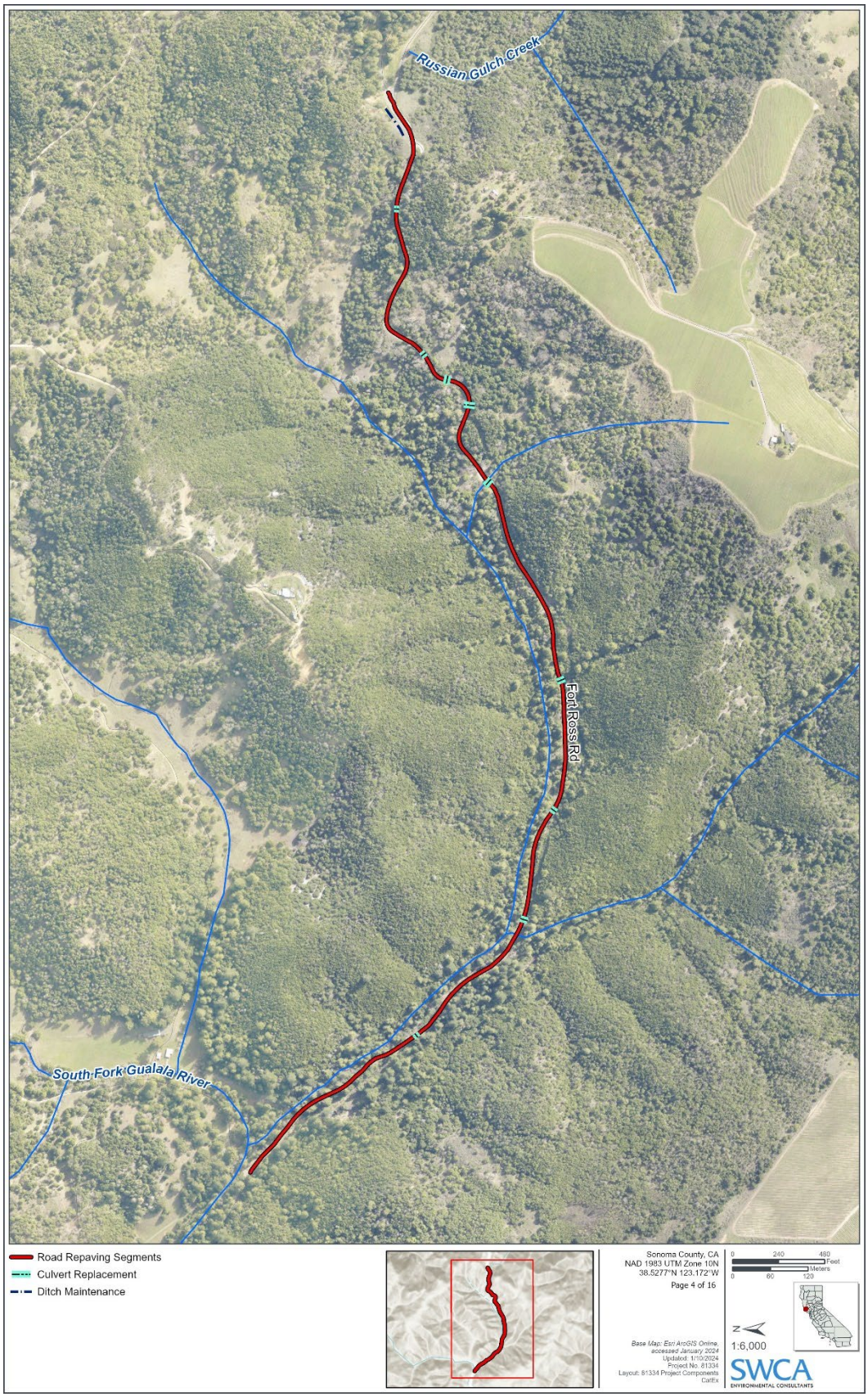


**Figure 1-D. Fort Ross Road**


**Figure 1-E. King Road - North**


**Figure 1-F. King Road - South**

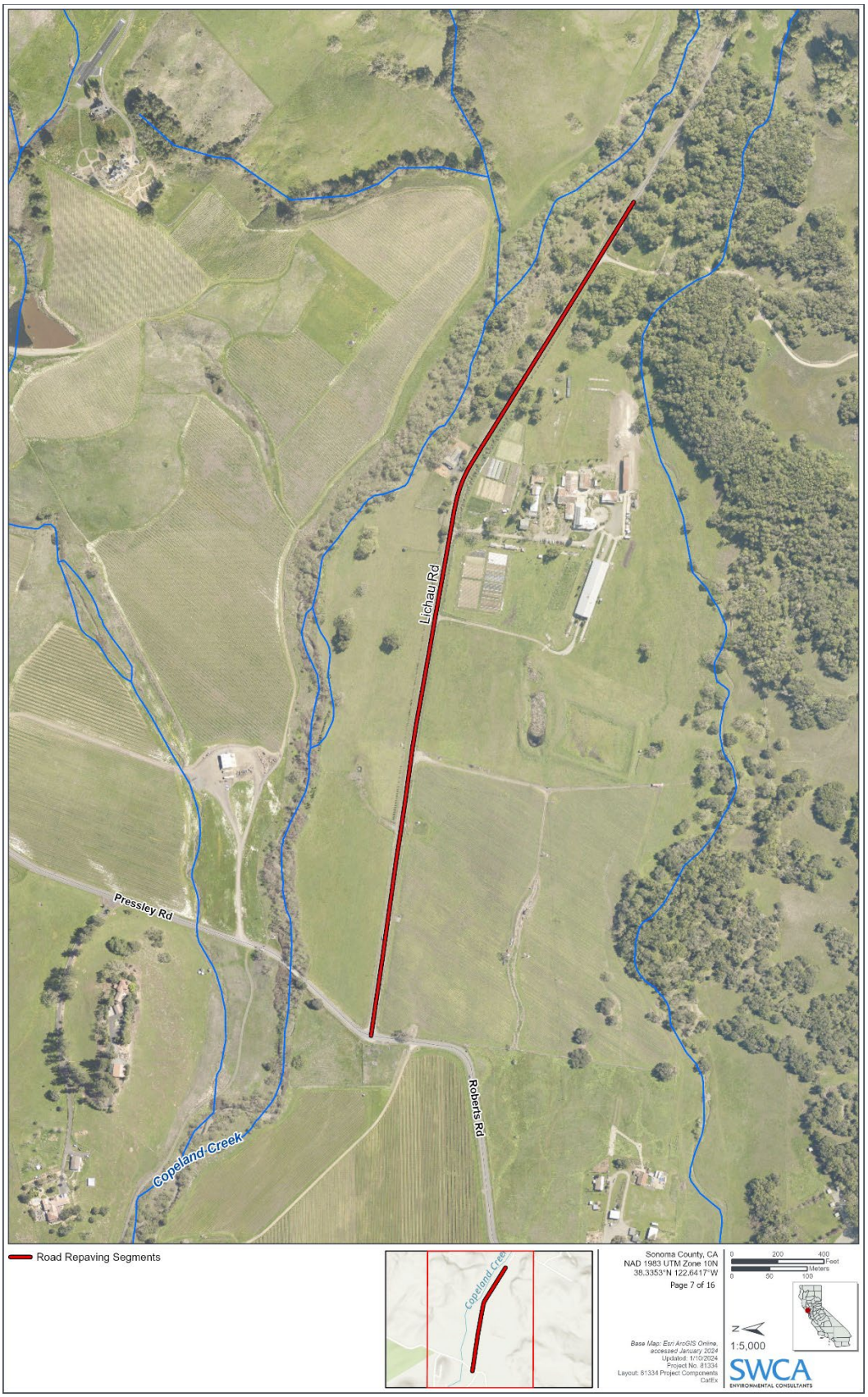


**Figure 1-G. Lichau Road**


**Figure 1-H. Morelli Lane - East**


**Figure 1-l. Morelli Lane - West**

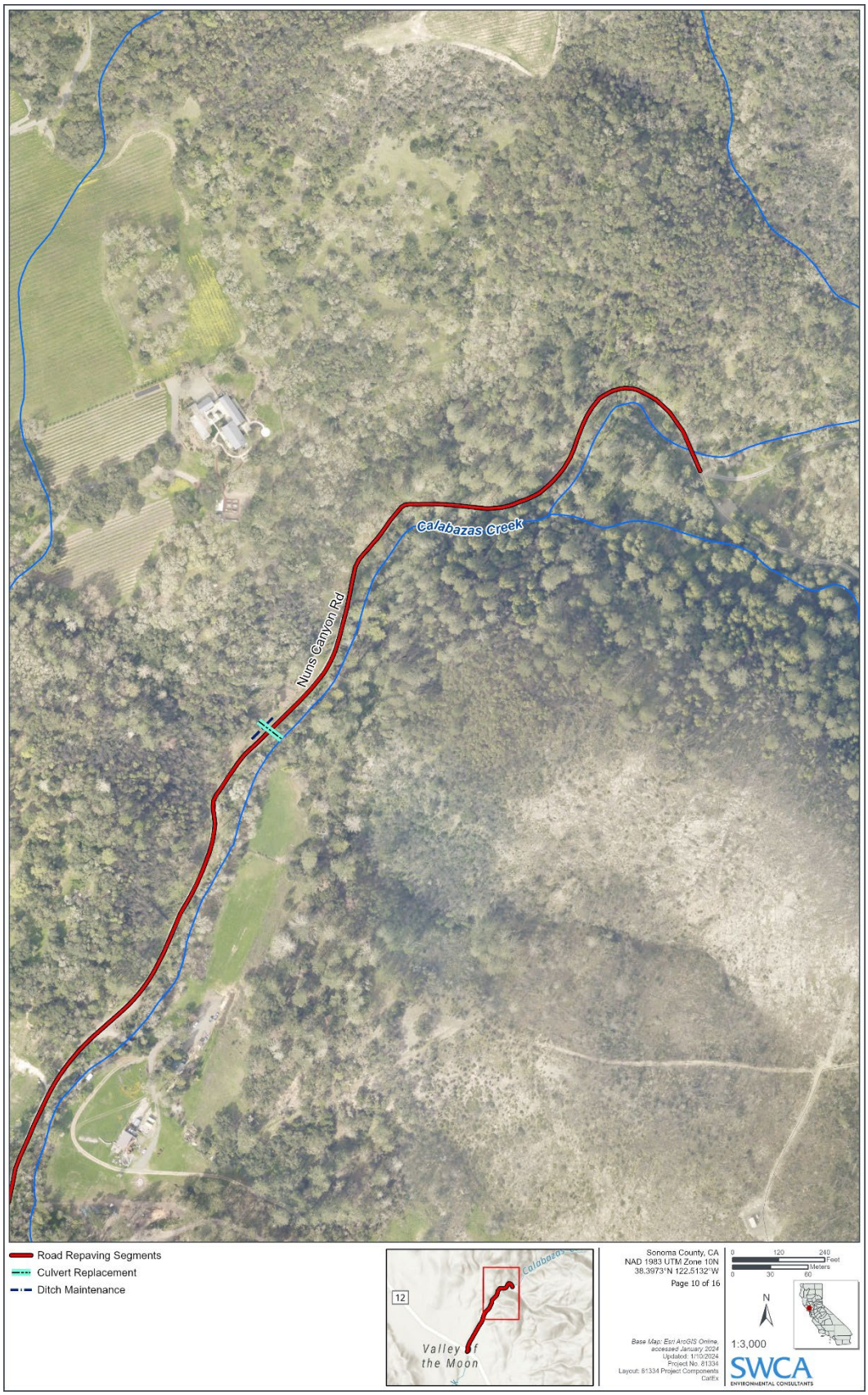


**Figure 1-J. Nuns Canyon Road - North**


**Figure 1-K. Nuns Canyon Road - South**


**Figure 1-L. Petaluma Hill Road**

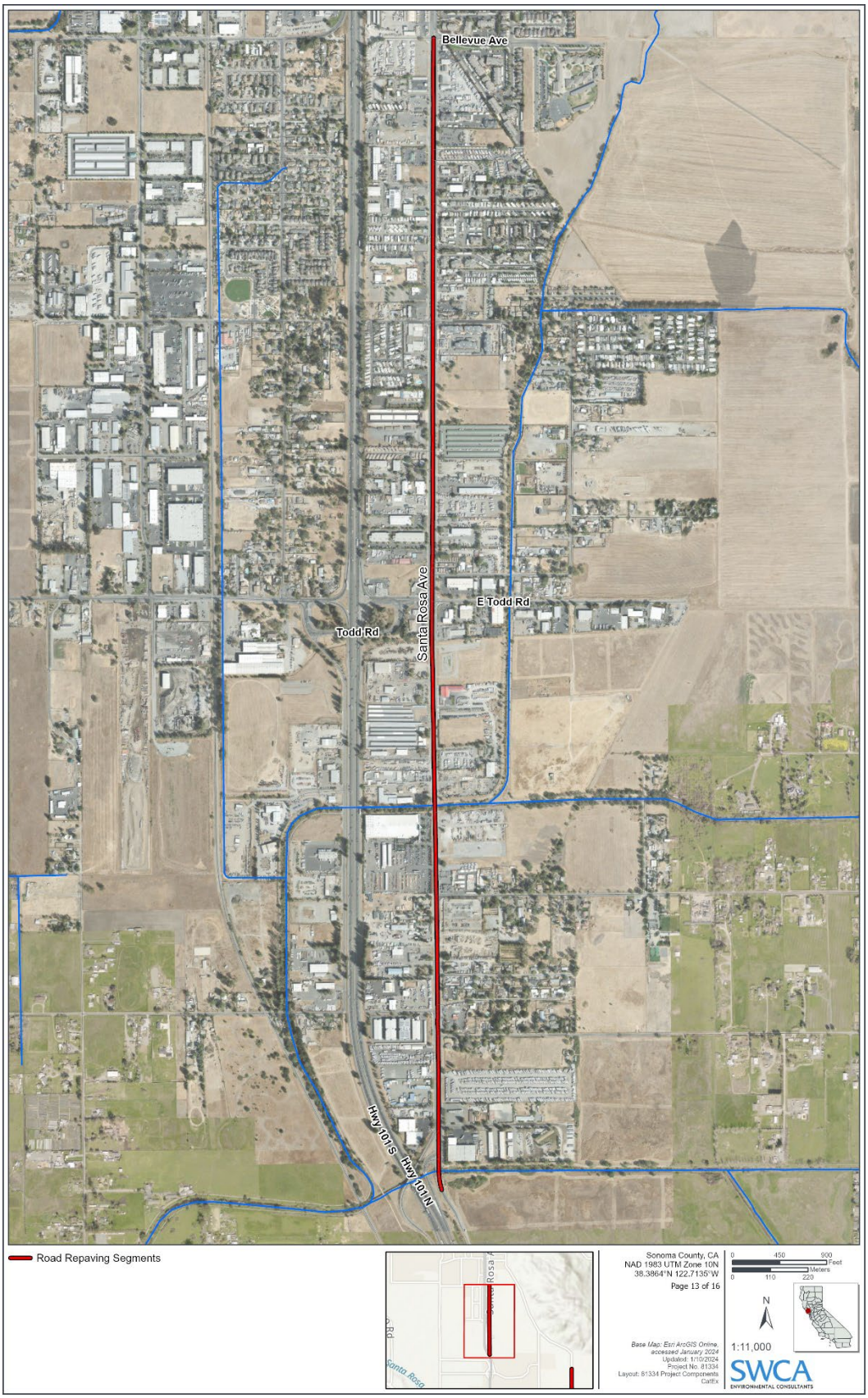


**Figure 1-M. Santa Rosa Avenue**

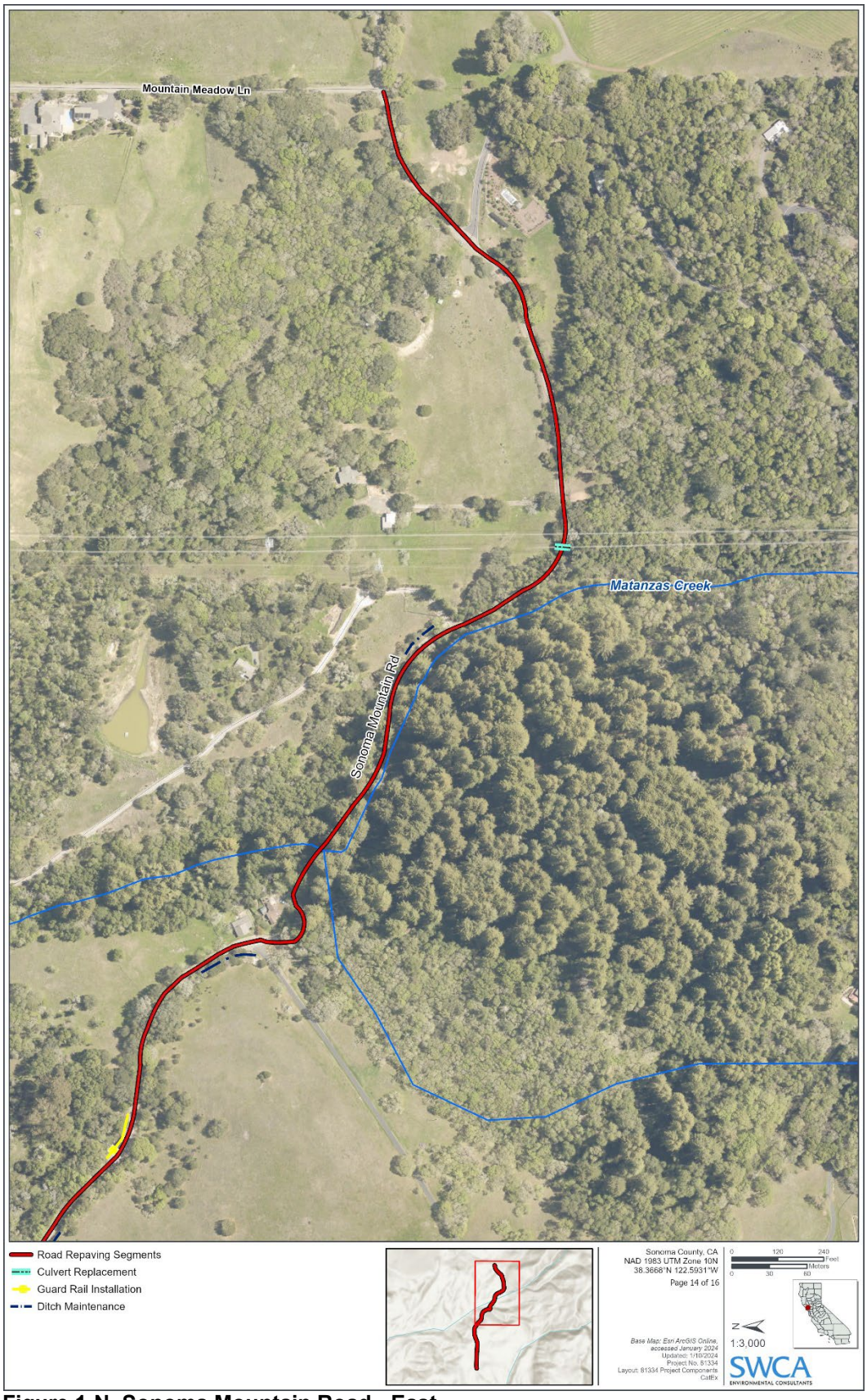


**Figure 1-N. Sonoma Mountain Road - East**

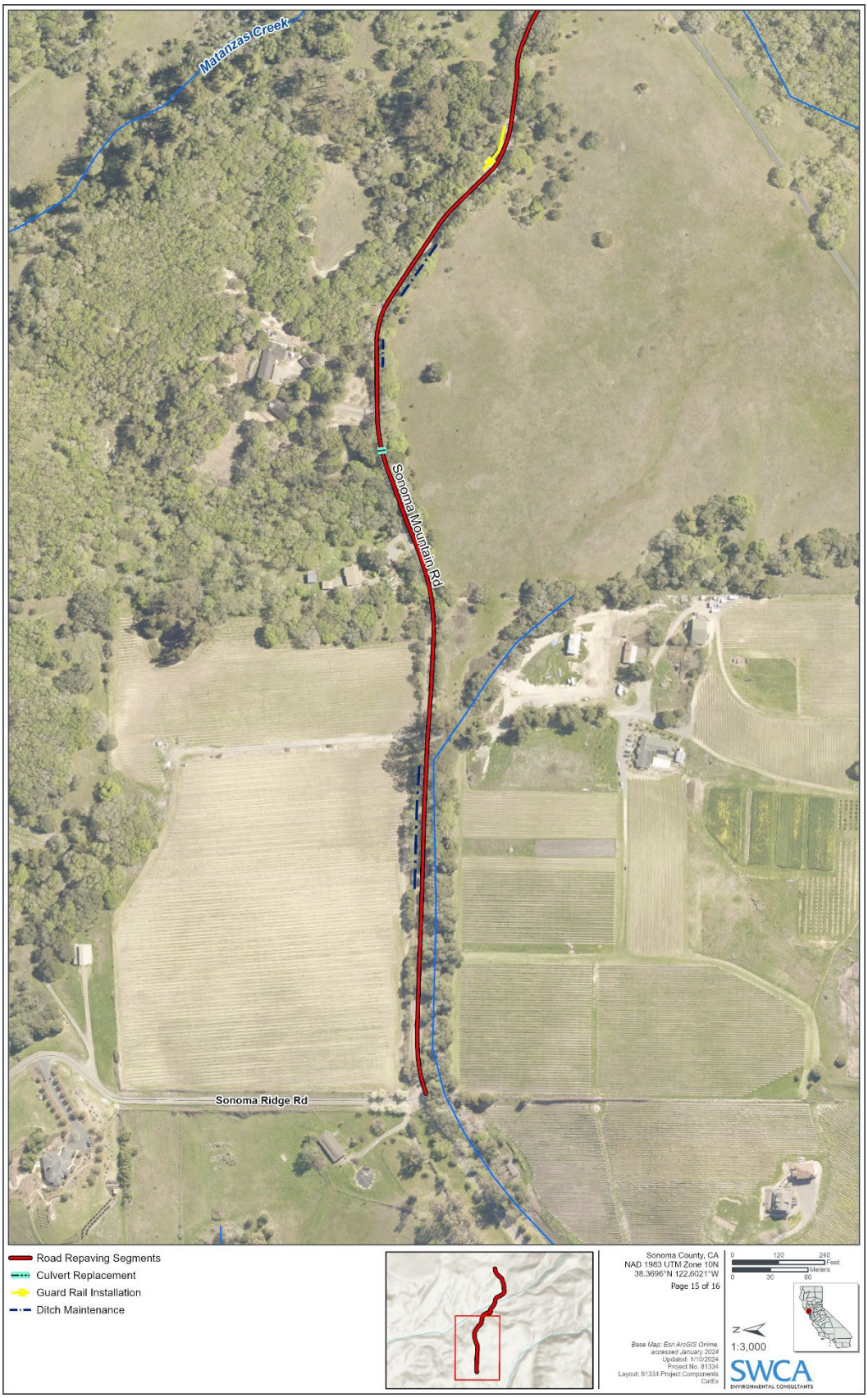


**Figure 1-O. Sonoma Mountain Road - West**


**Figure 1-P. Woodward Avenue**

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# Appendix B

# Biological Resources Evaluation

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# Biological Resources Evaluation for the Sonoma County Roads to Restoration Project, Sonoma County, California

**FEBRUARY 2024**

PREPARED FOR

**Sonoma County Public Infrastructure**

PREPARED BY

**SWCA Environmental Consultants**

# BIOLOGICAL RESOURCES EVALUATION FOR THE SONOMA COUNTY ROADS TO RESTORATION PROJECT, SONOMA COUNTY, CALIFORNIA

Prepared for

**Sonoma County Public Infrastructure**
2300 County Center Drive, Suite A220
Santa Rosa, CA 95403
Attn: Hunter McLaughlin

Prepared by

**SWCA Environmental Consultants**
60 Stone Pine Road, Suite 100
Half Moon Bay, CA 94019
(650) 440-4160
www.swca.com

SWCA Project No.81334

February 2024

# EXECUTIVE SUMMARY

Sonoma County Public Infrastructure (County) is proposing the Roads to Restoration Project (project), which consists of road repairs and maintenance activities within the County right-of-way along 12 distinct road segments located throughout Sonoma County. The proposed maintenance activities include road repaving (full depth reclamation or slurry seal), roadside ditch maintenance, culvert replacement, and guardrail installation, or some combination of these activities depending on the road segment.

The County retained SWCA Environmental Consultants (SWCA) to provide environmental support services, including conducting a biological resources survey and preparing a Biological Resources Evaluation (BRE), in support of the project. The purpose of this BRE is to document the biological resources within the project biological study area (BSA), which consists of the project footprint (project area) and an adjacent buffer (defined as being 25 feet from the center line of the road where paving activities are proposed and 100 feet around the project areas where ditch maintenance, culvert replacement, or guardrail installation is proposed). SWCA conducted a literature review of existing sources of information regarding occurrences of special-status species and sensitive resources near the BSA. Field surveys were conducted within the BSA in October 2023 to document biological resources, including special-status plant and wildlife species and potentially jurisdictional wetlands and other waters.

Based on the results of the literature review and field survey, the BSA contains or has the potential to support:

- Eight sensitive natural communities (see Section 6.1.1, *Natural Communities*);
- Fourteen federally, state-, or California Native Plant Society (CNPS)-listed plant species (see Section 6.2.1, *Special-Status Plants*);
- Six federally or state-listed wildlife species, including California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), coho salmon (*Oncorhynchus kisutch*) (Central California Coast Evolutionary Significant Unit [ESU]), Central California Coast steelhead (*Oncorhynchus mykiss irideus*) Distinct Population Segment (DPS), northern spotted owl (*Strix occidentalis caurina*), and tricolored blackbird (*Agelaius tricolor*) (see Section 6.2.2.1, *ESA/CESA-Listed Wildlife*);
- Five California Department of Fish and Wildlife (CDFW) Species of Special Concern (SSC) (see Section 6.2.2.2, *Other Special-Status Wildlife*);
- One CDFW fully protected species (white-tailed kite [*Elanus leucurus*]) (see Section 6.2.2.2, *Other Special-Status Wildlife*);
- Suitable habitat for several nesting migratory birds covered under the Migratory Bird Treaty Act (MBTA) (see Section 6.2.2.2, *Other Special-Status Wildlife*); and
- Several potentially jurisdictional waters and wetlands, including two seasonal wetlands, three perennial channels, 12 intermittent channels, one ephemeral channel, and four ephemeral ditches (see Section 6.5, *Jurisdictional Wetlands/Waters*).

With the exception of steelhead, which was observed within Calabazas Creek, adjacent to the Nuns Canyon Road project area, no other special-status species were observed during the field survey. Seven sensitive natural communities were identified within the BSA.

Construction-related impacts, including culvert replacement and ditch excavation, may directly impact several potentially jurisdictional features along Bloomfield Road, Fort Ross Road, King Road, Morelli Lane, and Sonoma Mountain Road. Such impacts will likely require the County to obtain a Section 404

Permit from the U.S. Army Corp of Engineers (USACE), a Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB), and a Section 1602 Lake and Streambed Alteration Agreement from the CDFW.

It is anticipated that with the implementation of the avoidance and minimization measures described in Section 8, *Recommendations/Avoidance and Minimization Measures*, of this report, project activities will not result in significant impacts to any special-status species or sensitive habitats.

# CONTENTS

## Appendices

# Figures



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# 1 INTRODUCTION

This Biological Resources Evaluation (BRE) has been prepared by SWCA Environmental Consultants (SWCA) at the request of Sonoma County Public Infrastructure (County). The purpose of this report is to identify sensitive biological resources that may be impacted by the Roads to Restoration Project (project). This BRE describes the regulatory setting for the project, the methods and results of the background research and reconnaissance-level field survey, a discussion of the possible permitting implications of the project, and recommended measures to avoid and minimize project impacts within the Biological Study Area (BSA). For the purposes of this report, the BSA consists of the project footprint (project area) and an adjacent buffer (defined as being 25 feet from the center line of the road where paving activities are proposed and 100 feet around the project areas where ditch maintenance, culvert replacement, or guardrail installation is proposed). SWCA anticipates that this document will be used in support of future regulatory permitting and California Environmental Quality Act (CEQA) compliance.

# 2 PROJECT DESCRIPTION

## 2.1 Location

The project consists of 12 distinct road segments (project areas) located throughout Sonoma County where maintenance activities will take place (Figure 1; Appendix A: Figures A-1–A-16). For the purposes of this report, all figures are arranged according to the 12 road segments rather than in numerical order to preserve clarity for the large area shown across project maps. Table 1 describes the location of each of these distinct road segments, whereas Section 2.2, *Project Overview*, describes the proposed activity at each of the distinct road segments.

## 2.2 Project Overview

The project includes 12 distinct road segments located throughout Sonoma County that require maintenance both within the paved road, as well as adjacent roadside ditches located within the County right-of-way. The proposed work activities may include road repaving (full depth reclamation or slurry seal), roadside ditch maintenance, culvert replacement, and guardrail installation, or some combination of each these activities. Not all activities described above will be performed at each road segment. Table 2 summarizes the proposed maintenance activities likely to be performed at each of the 12 distinct road segments.

**Table 1. Summary of Project Area Locations**

| Figure Number | Road Segment Project Area Location Name | Location Description | Sonoma County Post Mile | Coordinates (Road Segment Midpoint) | USGS 7.5-Minute Quadrangle |
|---|---|---|---|---|---|
| A-13 | Bloomfield Road | Spans approximately 1 mile from the Intersection of Tremari Road to intersection of Valley Ford Road | PM 10.00 to PM 11.06 | 38.31779216, -122.85105172 | Two Rock |
| A-16 | Casa Grande Road | Spans approximately 0.62 mile from the intersection of Adobe Road to approximately 350 feet north of the intersection of Allen Street | PM 10.81 to PM 11.44 | 38.25169988, -122.58832915 | Petaluma River<br>Glen Ellen |
| A-15 | Corona Road | Spans approximately 500 feet from the intersection of Petaluma Boulevard to the Petaluma River bridge crossing. | PM 9.98 to PM 10.06 | 38.26045027, -122.66023728 | Cotati |
| A-1, A-2 | Fort Ross Road | Spans approximately 1.3 miles from the intersection of Niestrath Road to the driveway Black Mountain Camp | PM 15.48 to PM 16.76 | 38.52736411, -123.17252661 | Fort Ross |
| A-14 | King Road | Spans the entire length 1.6 miles of King Road from intersection of Pepper Road to intersection of Bodega Avenue | PM 10.00 to PM 11.55 | 38.27234563, -122.71493373 | Cotati |
| A-11 | Lichau Road | Spans approximately 0.75 mile from the intersection of Roberts Road to approximately 0.2 mile west of Cold Springs Road | PM 11.36 to PM 12.09 | 38.33499494, -122.64132946 | Cotati |
| A-5, A-5 | Morelli Lane | Spans approximately 2 miles from intersection of Harrison Grade Road to intersection of Bohemian Highway | PM 10.00 to PM 11.91 | 38.42855438, -122.9464502 | Camp Meeker |
| A-8 | Nuns Canyon Road | Spans approximately 1 mile from intersection of Sonoma Highway to Calabazas Creek bridge crossing. | PM 9.99 to PM 11.03 | 38.39399256, -122.51620289 | Kenwood |
| A-10 | Petaluma Hill Road | Spans approximately 1.3 miles from intersection of Crane Canyon Road to intersection of Rohnert Park Expressway | PM 10.01 to PM 12.09 | 38.35558973, -122.66698907 | Cotati |
| A-6, A-7 | Santa Rosa Avenue | Spans approximately 2.1 miles from intersection of Bellevue Avenue to where Santa Rosa Avenue becomes Roberts Lake Road | PM 13.65 to PM 14.98 | 38.38673656, -122.71350044 | Santa Rosa<br>Cotati |
| A-9 | Sonoma Mountain Road | Spans approximately 1.15 miles from intersection of Sonoma Ridge Road to intersection of Mountain Meadows Lane | PM 23.25 to PM 24.41 | 38.36824049, -122.59687939 | Glen Ellen |
| A-12 | Woodward Avenue | Spans entire length 0.37 mile of Woodward Avenue from intersection of Main Street to intersection of Adobe Road | PM 10.00 to PM 10.38 | 38.29716984, -122.66298492 | Cotati |

Note: PM = Post Mile; USGS = U.S. Geological Survey

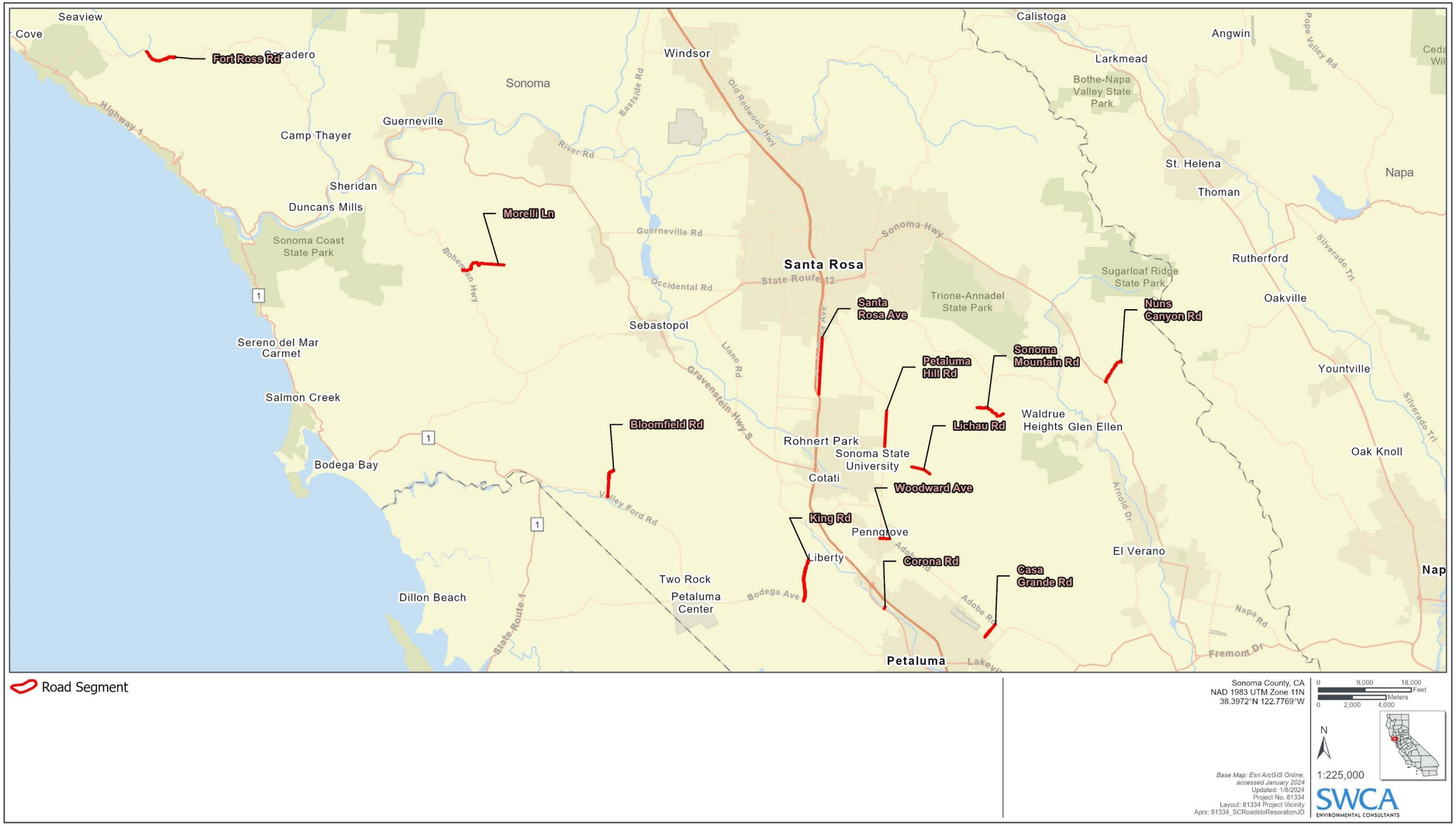


**Figure 1. Project Location Overview.**

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**Table 2. Proposed Repair Activities by Road Segment**

| | Proposed Activities | | | |
|---|---|---|---|---|
| **Road Segment** | **Paving** | **Ditch Maintenance** | **Culvert Replacement** | **Guardrail Installation** |
| Bloomfield Road | Full depth reclamation from Valley Ford Road to Tremari Road (Post Mile [PM] 10.00–PM 11.06) | Sediment removal along 6 segments | | |
| Casa Grande Road | Full depth reclamation/overly from Petaluma City Limits to Adobe Road (PM 10.81–PM 11.44) | Sediment removal along 2 segments | | Install metal beam guardrail along both sides of road at PM 10.837 to PM 10.862 and PM 11.150 to 11.209 |
| Corona Avenue | Overlay from Petaluma Blvd North to the end of County maintained limits (PM 9.98–PM10.06) | | | |
| Fort Ross Road | Overlay from Niestrath Road to Black Mountain Camp (PM 15.48–PM 16.76) | Sediment removal from PM 16.718 to PM 16.750 | Culvert replacements at 9 locations between PM 15.694 and PM 16.640 | |
| King Road | Full depth reclamation from Bodega Avenue to Pepper Road (PM 10.00–PM 11.55) | Sediment removal along 43 segments | Culvert replacements at PM 10.384 and PM 10.550 | |
| Lichau Road | Full depth reclamation from Roberts Road to PM 12.09 | | | |
| Morelli Lane | Full depth reclamation from Bohemian Highway to Harrison Grade Road (PM 10.00–PM 11.91) | | Culvert replacements at PM 10.425, PM 10.494, PM 10.643, PM 10.809, PM 10.993 | Install metal beam guardrail along both sides of road at PM 10.690 to 10.698 |
| Nuns Canyon Road | Full depth reclamation/overlay, add paved turnouts where possible from Highway 12 to end of County-maintained limits (PM 9.99–PM 11.03) | Sediment removal along 3 segments | Culvert replacements at PM 10.000 and PM 10.708 | Install metal beam guardrail at PM 10.009 |
| Petaluma Hill Road | Shoulder repairs from Rohnert Park Expressway to Crane Canyon Road (PM 13.65–PM 14.98) | | | |
| Santa Rosa Avenue | Restripe from Roberts Lake Road to Bellevue Avenue (Santa Rosa City Limits) (PM 10.01–PM 12.09) | | | |
| Sonoma Mountain Road | Full depth reclamation from Sonoma Ridge Road to Mountain Meadow Lane (PM 23.25–PM 24.41) | Sediment removal along 5 segments | Culvert replacements at PM 23.572 and PM 24.141 | Install metal beam guardrail at PM 23.729 to 23.756 |
| Woodward Avenue | Overlay from Main Street to Bannon Lane (PM 10.00 to 10.38) | | | |

# 3 ENVIRONMENTAL SETTING

Sonoma County lies within the Central California Foothills and Coastal Mountains Ecoregion (U.S. Environmental Protection Agency [USEPA] 2013). The environmental conditions throughout Sonoma County vary widely, dependent on season, elevation, proximity to the Pacific coast, and level of anthropogenic activities. A variety of land uses are common throughout the BSA, including agricultural, commercial/industrial, and rural development uses, as well as residential land use ranging from high density to rural residential. Similarly, a variety of habitats and land cover types are common, generally including conifer forests, oak woodlands, montane hardwood, agricultural land, grasslands, riparian areas, wetlands, and urban and developed landscapes. The full list of natural communities and land cover types is described in detail below in section 6, *Results.*

## 3.1 Climate

The temperature and precipitation data described in this section are based on the closest National Weather Service Field Office Climate Data for the Sonoma County (WZ2504), California weather station (National Weather Service 2023). Sonoma County has a Mediterranean climate, with warm to hot, dry summers and mild to cool, wet winters. Average minimum and maximum annual temperatures range from 36 to 83 degrees Fahrenheit (°F). Average annual precipitation at the Sonoma County weather station is 16.63 inches, with most rainfall occurring between October and April. In addition, the survey area experiences summer fogs and milder temperatures along the coast consistent with the San Francisco Bay Area Region in which the survey area is located.

Hydrologic conditions were within the normal range (compared to the rolling 30-year period averages) during field surveys conducted in October 2023. No abnormal drought or wetness conditions were present, and conditions were appropriate for evaluating hydrologic indicators. The BSA had average precipitation levels typical of the dry season leading up to the biological field survey, with no rain recorded prior to the first day of field surveys on October 2, 2023. In addition, the National Drought Mitigation Center does not show Sonoma County as an area experiencing drought in the time leading up to the field investigations (National Drought Mitigation Center 2023). Precipitation preceding delineation field work is reported in the *Preliminary Jurisdictional Delineation Report for the Sonoma County Roads to Restoration Project, Sonoma County, California* (PJD; SWCA 2024).

## 3.2 Topography

The BSA for the project is located within the northern Coast Ranges Geomorphic Province. The Coast Ranges consist of a series of mountain ranges and valleys that trend northwest, running parallel to the San Andreas Fault and the Pacific Ocean (California Geological Survey [CGS] 2002). The northern and southern ranges are separated by the San Francisco Bay. The northern Coast Ranges are dominated by irregular, knobby, landslide topography (CGS 2002). The BSA for the project features a mosaic of rolling hills, canyons, and flat topographies. Elevation in the BSA ranges from approximately 20 feet (along Corona Road) to 1,430 feet (along Fort Ross Road) above sea level. Santa Rosa Avenue, Woodward Avenue, Corona Road, Lichau Road, Bloomfield Road, Petaluma Hill Road, and Casa Grande Road are all roadways with primarily agricultural land uses with residential or commercial properties scattered throughout, and the topography varies from flat to gently rolling slopes. Several roadways, including Fort Ross Road, Morelli Lane, Sonoma Mountain Road, and Nuns Canyon Road, are located within the foothills of Sonoma County and vary from moderate to steeply sloped. Table 3 shows the elevation ranges for each road segment.

**Table 3. Elevation Ranges by Road Segment**

| Road Segment | Minimum Elevation | | Mean Elevation | | Maximum Elevation | |
|---|---|---|---|---|---|---|
| | Meters | Feet | Meters | Feet | Meters | Feet |
| Woodward Avenue | 22.07 | 72.41 | 29.60 | 97.11 | 36.71 | 120.44 |
| Corona Road | 7.40 | 24.28 | 9.37 | 30.74 | 9.73 | 31.92 |
| King Road | 22.87 | 75.03 | 45.14 | 148.10 | 68.09 | 223.39 |
| Fort Ross Road | 287.08 | 941.86 | 338.94 | 1112.01 | 430.80 | 1413.39 |
| Petaluma Hill Road | 46.97 | 154.10 | 50.18 | 164.63 | 59.86 | 196.39 |
| Lichau Road | 84.72 | 277.95 | 101.35 | 332.51 | 120.74 | 396.13 |
| Bloomfield Road | 15.23 | 49.97 | 28.11 | 92.22 | 48.27 | 158.37 |
| Casa Grande Road | 22.27 | 73.06 | 30.53 | 100.16 | 44.64 | 146.46 |
| Morelli Lane | 106.41 | 349.11 | 199.50 | 654.53 | 242.06 | 794.16 |
| Santa Rosa Avenue | 29.82 | 97.83 | 32.48 | 106.56 | 37.09 | 121.69 |
| Nuns Canyon Road | 109.82 | 360.30 | 128.42 | 421.33 | 151.18 | 496.00 |
| Sonoma Mountain Road | 277.51 | 910.47 | 303.42 | 995.47 | 349.01 | 1145.05 |

## 3.3 Hydrology

Much of central and northern Sonoma County lies in the watershed of the Russian River (Hydrologic Unit Code [HUC] 8-18010110), which empties into the Pacific Ocean. Major tributaries to the Russian River include Laguna de Santa Rosa, Mark West Creek, and Santa Rosa Creek. Much of southern Sonoma County is drained by the Petaluma River and Sonoma Creek (HUC 8-18050002), which empty into the San Pablo Bay (U.S. Geological Survey [USGS] 2023). Many smaller tributaries such as Adobe Creek, Americano Creek, Calabazas Creek, Copeland Creek, Crane Creek, Dutch Bill Creek, Matanzas Creek, Hinebaugh Creek, and the South Fork Gualala River lie within or adjacent to the BSA. The National Wetlands Inventory (NWI) wetlands mapping tool identified several other unnamed potential waters or wetlands within the survey area (U.S. Fish and Wildlife Service [USFWS] 2023b). These features are shown in Appendix B (Figures B-1–B-37) and discussed in Section 6.5, *Jurisdictional Wetlands/Waters*.

## 3.4 Soils

Based on the Natural Resources Conservation Service (NRCS) Web Soil Survey data, the survey area contains 42 soil types (NRCS 2023; see Appendix B: Figures B-1–B-37). Soil observed during the aquatic resources field investigations within the BSA was consistent with that mapped on the NRCS Web Soil Survey. Soils were incidentally investigated as part of the wetland delineation effort; however, detailed soil mapping was not conducted as part of these surveys throughout the BSA. Detailed soil descriptions are provided in Table 4.

# 4 REGULATORY OVERVIEW

## 4.1 Federal

### *4.1.1 Bald and Golden Eagle Protection Act*

The Bald and Golden Eagle Protection Act regulates take, possession, sale, purchase, barter, transport, import, and export of any bald or golden eagle or its parts (e.g., nests, eggs, young) unless allowed by permit (16 United States Code [USC] 668(a); 50 Code of Federal Regulations [CFR] 22). Take was broadly defined to include shoot, wound, kill, capture, collect, molest, or disturb.

### *4.1.2 Clean Water Act*

The Clean Water Act (CWA) is the primary federal law regulating water quality. The implementation of the CWA is the responsibility of the USEPA. However, the USEPA depends on other agencies, such as the individual states and the U.S. Army Corps of Engineers (USACE), to assist in implementing the CWA. The objective of the CWA is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Sections 404 and 401 of the CWA apply to activities that would impact waters of the United States. The USACE enforces Section 404 of the CWA, and the California State Water Resources Control Board (SWRCB) enforces Section 401, as well as state water laws.

### *4.1.3 Federal Endangered Species Act*

The Federal Endangered Species Act (FESA) of 1973, as amended, provides the regulatory framework for the protection of plant and animal species (and their associated critical habitats) that are formally listed, proposed for listing, or candidates for listing as endangered or threatened under the FESA. Under FESA Section 7, any federal agency that is authorizing, funding, or carrying out an action that may jeopardize the continued existence of federally listed threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species must consult with the federal agency that oversees the protection of that species, typically the USFWS and/or National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries), depending on the species that may be affected. Non-federal agencies and private entities can seek authorization for take of federally listed species under FESA Section 10, which requires the preparation of a Habitat Conservation Plan.

### *4.1.4 Migratory Bird Treaty Act*

The Migratory Bird Treaty Act (MBTA; 16 USC 703 et seq.; 50 CFR 10) states it is "unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill; attempt to take, capture or kill; possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export any migratory bird, any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or in part, of any such bird or any part, nest or egg thereof . . . " Actions causing take (including incidental take) are currently prohibited under the MBTA.

**Table 4. Soils by Project Locations**

| Map Unit Symbol | Map Unit Name | Soil Characteristics | Bloomfield Road | Casa Grande Road | Corona Avenue | Fort Ross Road | King Road | Lichau Road | Morelli Lane | Nuns Canyon Road | Petaluma Hill Road | Santa Rosa Avenue | Sonoma Mountain Road | Woodward Avenue |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AdA | Alluvial land, sandy | The Land series consists of very deep, somewhat poorly drained soils that formed in silty alluvium from mixed sources. Land soils are on flood plains, stream terraces, and alluvial flats. Slopes range from 0 to 2 percent. | | | X | | | X | | | | | | |
| AeA | Alluvial land, clayey | | | | | | | X | | | | | | |
| BcA | Blucher fine sandy loam, overwash, 0 to 2 percent slopes | The Blucher series consists of deep, somewhat poorly drained soils that formed in alluvium from mixed sources. Blucher soils are in basins and on alluvial fans and have slopes of 2 to 5 percent. The soils formed in alluvium from mixed sources. | | | | | X | | | | | | | |
| BlB | Blucher clay loam, 2 to 5 percent slopes | | | | | | | | X | | | | | |
| CcA | Clear Lake clay loam, 0 to 2 percent slopes | The Clear Lake series consists of very deep, poorly drained soils that formed in fine-textured alluvium derived from mixed rock sources. Clear Lake soils are in flood basins, floodplains, and swales of drainageways. Slopes are 0 to 5 percent. The soils formed in fine-textured alluvium derived from igneous, metamorphic, and sedimentary rocks | | | | | | | | | X | | | |
| CcB | Clear Lake clay loam, 2 to 5 percent slopes | | | | | | | | | X | | | | |
| CeA | Clear Lake clay, sandy substratum, 0 to 2 percent slopes | | | X | | | | | | | X | X | | X |
| CeB | Clear Lake clay, sandy substratum, 2 to 5 percent slopes | | | | | | | | | | X | | | |
| CfA | Clear Lake clay, ponded, 0 to 2 percent slopes | | | X | | | | X | | | X | X | | |
| CtD | Cotati fine sandy loam, 9 to 15 percent slopes | The Cotati series consists of deep and very deep, moderately well-drained soils formed in material weathered from soft sedimentary rocks. Cotati soils are on terraces and have slopes of 2 to 30 percent. | | | | | | | | | | | | X |
| CtC | Cotati fine sandy loam, 2 to 9 percent slopes | | | | | | | | | | | | | X |
| GdE | Goldridge fine sandy loam, 15 to 30 percent slopes | The Goldridge series consists of deep and very deep, moderately well-drained soils formed in material weathered from weakly consolidated sandstone. Goldridge soils are on rolling uplands with slopes of 2 to 50 percent. | | | | | | | X | | | | | |
| GdF | Goldridge fine sandy loam, 30 to 50 percent slopes | | | | | | | | X | | | | | |
| GgE | Goulding clay loam, 15 to 30 percent slopes | The Goulding series consists of shallow, somewhat excessively drained soils formed in material weathered from metavolcanic or metasedimentary rocks. Goulding soils are on mountains and have slopes of 5 to 75 percent. | | | | | | | | | | | X | |
| GgF | Goulding clay loam, 30 to 50 percent slopes | | | | | | | | | | | | X | |
| GuF | Gullied land | Gullied land is land areas where all soil horizons have been removed by flowing water, resulting in V- or U-shaped channels. | | X | | | | | | | | | | |
| HbD | Haire gravelly loam, 9 to 15 percent slopes | The Haire series is a member of the clayey, mixed, thermic family of Typic Haploxerults. Haire soils are on nearly level to moderately steep hills and formed in terrace deposits and in part in residuum weathered from arkosic sandstone and granodiorite. | | X | | | | | | | | | | |
| HgG2 | Henneke gravelly loam, 30 to 75 percent slopes, eroded | The Henneke series consists of shallow, well-drained soils that formed in material weathered from ultramaficserpentinite rocks. Henneke soils are on hills and have slopes of 5 to 75 percent. | | | | | | | X | | | | | |
| HlF | Hugo-Atwell complex, 30 to 50 percent slopes | The Hugo series consists of deep, well-drained soils that formed in material weathered from sandstone, shale, schist, and conglomerate. Hugo soils are on uplands and have slopes of 9 to 75 percent. | | | | X | | | | | | | | |
| HkF | Hugo very gravelly loam, 30 to 50 percent slopes | | | | | | | | X | | | | | |
| HkG2 | Hugo very gravelly loam, 50 to 75 percent slopes, eroded | | | | | X | | | | | | | | |
| HnG2 | Hugo-Josephine complex, 50 to 75 percent slopes, eroded | | | | | X | | | | | | | | |
| HtC | Huichica loam, 2 to 9 percent slopes | The Huichica soils occur in gently sloping smooth to hummocky floodplains under grass and scattered oaks. | | | | | | | | X | | | | |

| Map Unit Symbol | Map Unit Name | Soil Characteristics | Bloomfield Road | Casa Grande Road | Corona Avenue | Fort Ross Road | King Road | Lichau Road | Morelli Lane | Nuns Canyon Road | Petaluma Hill Road | Santa Rosa Avenue | Sonoma Mountain Road | Woodward Avenue |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MoG | Montara cobbly clay loam, 30 to 75 percent slopes | The Montara series consists of shallow well-drained soils that formed in material weathered from serpentinitic rocks. Montara soils are on uplands and ridge tops and have slopes of 5 to 75 percent. | | | | | | | X | | | | | |
| RhD | Red Hill clay loam, 2 to 15 percent slopes | The Red Hill series is a member of a fine-loamy, mixed, mesic family of Ultic Palexerolls. Red Hill soils occur on strongly sloping to steep uplands under hardwoods and conifers. Underlying rock is basic igneous and is metamorphosed in places. | | | | | | | | X | | | | |
| RhF | Red Hill clay loam, 30 to 50 percent slopes | | | | | | | | | X | | | | |
| RnA | Riverwash | Riverwash is unvegetated sand bars in the main channel of the river. | | | | | | | | | X | | | |
| PaB | Pajaro fine sandy loam, 2 to 5 percent slopes | The Pajaro series consists of somewhat poorly drained soils that formed in terraces and foot slopes. Pajaro series are typically found in farmed areas with 0 to 2 percent slopes. | X | | | | | | | | | | | |
| SkC | Spreckels loam, 2 to 9 percent slopes | The Spreckels series is a member of the fine, mixed, mesic family of Ultic Palexeralfs. Spreckels soils occur on sloping to hilly uplands of tuffaceous sediments. | | | | | | | | | | | X | |
| SkD | Spreckels loam, 9 to 15 percent slopes | | | | | | | | | | | | X | |
| SkE | Spreckels loam, 15 to 30 percent slopes | | | | | | | | | X | | | X | |
| SnC | Steinbeck loam, 2 to 9 percent slopes | The Steinbeck series consists of deep, well-drained soils that formed in material weathered from soft sand-stone. Steinbeck soils are on smooth rolling hills and have slopes of 2 to 50 percent. Steinbeck soils occur on dissected marine terraces of soft weathered sandstone. | X | | | | X | | | | | | | |
| SnD | Steinbeck loam, 9 to 15 percent slopes | | X | | | | X | | | | | | | |
| SnF2 | Steinbeck loam, 30 to 50 percent slopes, eroded | | X | | | | X | | | | | | | |
| WoA | Wright loam, shallow, wet, 0 to 2 percent slopes | The Wright series consists of deep, somewhat poorly drained soils formed in alluvium from mixed rock sources. Wright soils are on low terraces and have slopes of 0 to 9 percent. | | | | | | | | | | X | | |
| WhA | Wright loam, wet, 0 to 2 percent slopes | | | | | | | | | | | X | | |

Source: NRCS (2023).

# 4.2 State

## 4.2.1 California Endangered Species Act

The California Endangered Species Act (CESA; California Fish and Game Code Section 2050 et seq.) generally parallels the FESA. It establishes the policy of the state to conserve, protect, restore, and enhance threatened or endangered species and their habitats. Section 2080 of the California Fish and Game Code prohibits the take, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or by the regulations. "Take" is defined in California Fish and Game Code Section 86 as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." This definition differs from the definition of "take" under the FESA. The CESA is administered by the California Department of Fish and Wildlife (CDFW). The CESA allows for take incidental to otherwise lawful projects but mandates that state lead agencies consult with the CDFW to ensure that a project would not jeopardize the continued existence of threatened or endangered species.

## 4.2.2 Native Plant Protection Act

The Native Plant Protection Act (NPPA) was created in 1977 with the intent to preserve, protect, and enhance rare and endangered plants in California (California Fish and Game Code Sections 1900–1913). The NPPA is administered by the CDFW, which has the authority to designate native plants as endangered or rare and to protect them from "take." The CDFW maintains a list of plant species that have been officially classified as endangered, threatened or rare. These special-status plants have special protection under California law and projects that directly impact them may not qualify for a categorical exemption under CEQA guidelines.

## 4.2.3 California Fish and Game Code

### 4.2.3.1 SECTIONS 1600 THROUGH 1607

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

### 4.2.3.2 SECTIONS 3503 AND 3513

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

#### 4.2.3.3 SECTIONS 3511, 4700, 5050, AND 5515

The classification of California Fully Protected (FP) species was the CDFW's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for birds, mammals, amphibians and reptiles, and fish. Most of the species on these lists have subsequently been listed under the FESA and/or CESA. The California Fish and Game Code sections (3511 for birds, 4700 for mammals, 5050 for amphibian and reptiles, and 5515 for fish) deal with FP species and state that these species " . . . may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species" (California Fish and Game Commission 1998). "Take" of these species may be authorized for necessary scientific research. This language makes the FP designation the strongest and most restrictive regarding the "take" of these species. In 2003 the sections dealing with FP species were amended to allow the CDFW to authorize take resulting from recovery activities for state-listed species.

#### 4.2.3.4 SECTIONS 4150 THROUGH 4155

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

### *4.2.4 Porter-Cologne Water Quality Control Act*

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

## 4.3 Local

### *4.3.1 Sonoma County Tree Protection Ordinance*

The Sonoma County Tree Protection Ordinance requires the protection and/or replacement of trees defined as "protected." Protected trees include all native species with a diameter at breast height (DBH) of 9 inches or greater. Exemptions to tree protections include timber harvest plans (THP) filed with the State of California, emergency tree removal in the instance of hazards, lot line adjustments, zoning permits, and agricultural uses. Additionally, the ordinance shall not be applied in the instance of rendering a property undevelopable or to reduce an allowable density lower than that permitted as a result of CEQA. A permit from the County is required for the removal of protected trees, and replacement plantings of the same species as the removed trees or an in-lieu fee are required by the County.

### 4.3.2 Santa Rosa Plain Conservation Strategy

The Santa Rosa Plain Conservation Strategy is an area within Sonoma County established by the USFWS for the protection and continued existence of California tiger salamander (CTS) (*Ambystoma californiense*) and three endangered plant species: Burke's goldfields (*Lasthenia burkei*), Sonoma sunshine (*Blennosperma bakeri*), and Sebastopol meadowfoam (*Limnanthes vinculans*). The Final Conservation Strategy (USFWS 2005) outlines the species of concern for this area along with guidance for specific conservation measures. In 2007 the USACE consulted with the USFWS for Section 404 permitting within the Conservation Strategy Area, which resulted in the issuance of a Programmatic Biological Opinion (PBO) (USFWS 2007). The PBO for the Conservation Strategy outlines the mitigation requirements necessary to compensate for impacts to wetlands and associated species, including CTS and the three listed plants. The PBO can be appended to permits authorized by the USACE.

# 5 METHODS

## 5.1 Definitions

### 5.1.1 Special-Status Plant Species

For the purposes of this document, special-status plant species are defined as the following:

- Plants listed or proposed for listing as threatened or endangered under the FESA
- Plants listed, proposed, or candidates for listing by the State of California as threatened or endangered under the CESA
- Plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered" in California (California Rare Plant Ranks [CRPR] 1A, 1B, 2A, and 2B).
- Plants listed under the NPPA

### 5.1.2 Special-Status Wildlife Species

For the purposes of this document, special-status wildlife species are defined as the following:

- Wildlife listed or proposed for listing as threatened or endangered under the FESA
- Wildlife that are candidates for possible future listing as threatened or endangered under the FESA
- Wildlife listed, proposed, or candidates for listing as threatened and endangered under the CESA
- CDFW Species of Special Concern (SSC)
- CDFW FP species

### 5.1.3 Species' Potential to Occur

The likelihood of special-status species occurrences should be determined based on natural history parameters, including, but not limited to, the species' range, habitat, foraging needs, migration routes, and reproductive requirements as well as recent occurrence records. The potential for special-status species to occur are summarized in Table C-1 (Appendix C), and the potential for occurrence is defined as follows:

- **Present:** The species has been documented within the BSA by a reliable observer during recent surveys and habitat has not significantly been degraded or eliminated since the observation was made (e.g., no habitat removal associated with a development).
- **Likely to occur:** The species has a strong likelihood to be present in the BSA as indicated by factors such as habitat quality, proximity to known records, presence of suitable dispersal corridors, etc. The BSA contains suitable habitat and is located within the elevational and geographic ranges of the species.
- **Unlikely to occur:** The species is not likely to occur in the BSA. Potentially suitable habitat is present, but the project area may be outside of the species' elevational and/or geographic ranges, contain substantially degraded or fragmented habitat, lack recent occurrence records within dispersal distance, be isolated from known populations by barriers to migration/dispersal, and/or contain predators or invasive species that inhibit survival or occupation.
- **No potential:** The species is not expected to occur in the BSA due to one or more of the following conditions: suitable habitat is absent from the BSA, the BSA is located substantially outside of the species' elevational and/or geographic ranges, or the species is restricted to or known to be present only within a specific area outside of the BSA.
- **Absent:** The species is not expected to occur in the BSA due to one or more of the following conditions: suitable habitat is absent from the BSA, the BSA is located substantially outside of the species' elevational and/or geographic ranges, or the species is restricted to or known to be present only within a specific area outside of the BSA.

## 5.2 Background Research

SWCA performed a literature and database review to identify potential sensitive biological resources that have the potential to occur in the BSA. The database review consisted of a CNDDB record search for special-status species within 2 miles of the BSA (CDFW 2023a), a CNPS Rare Plant Program Inventory of Rare and Endangered Plants of California record search of the nine USGS 7.5-minute quadrangles surrounding the project site (CNPS 2023b), and the USFWS Information for Planning and Consultation (IPaC) planning tool (USFWS 2023a) (Appendix D).

Other sources reviewed included the following:

- eBird (Cornell Lab of Ornithology 2023)
- NOAA Fisheries Essential Fish Habitat Mapper (NOAA 2023)
- NRCS Web Soil Survey (NRCS 2023)
- USFWS National Wetland Inventory (NWI) (USFWS 2023b)
- USGS National Hydrography Dataset (NHD) (USGS 2023)
- CDFW *California Natural Communities List* (CDFW 2023b)
- CDFW *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2023d)
- CDFW *Special Animals List* (CDFW 2023e)
- The Consortium of California Herbaria (CCH 2023)

# 5.3 Field Survey(s)

## *5.3.1 Vegetation Communities and Land Cover Surveys*

### 5.3.1.1 VEGETATION MAPPING

On October 2, 3, and 4, 2023, SWCA biologists Sarah Willbrand, Leticia Morris, Alec Villanueva, and Charlotte Soergel conducted surveys to characterize natural vegetation communities and describe existing land covers within the BSA. Vegetation classification and mapping was conducted in accordance with applicable methods and guidance in *The Survey of California Vegetation Classification and Mapping Standards* (CDFW 2022). Vegetation assemblages occurring at 0.25 acre or greater were described to the alliance level based on the descriptions provided in the *California Natural Community List* (CDFW 2023b), which is adapted from the technical approach and vegetation alliance classification system described in *A Manual of California Vegetation* (MCV) (Sawyer et al. 2009) and the MCV Online (CNPS 2023a). When necessary, SWCA biologists referred to Jepson eFlora (Jepson Flora Project 2023) to identify and key to plant species.

Sonoma County contains a high degree of complexity across vegetation types throughout the county. Some of the associations that occur in the BSA were below the minimum mapping unit (MMU) for this vegetation classification (0.25 acre or greater) to accurately detect all associations for this project. Therefore, where applicable, background vegetation classifications from prior mapping projects in Sonoma County were reviewed and verified in the field or approximated using the appropriate classification (Klein et al. 2015a, 2015b; Sonoma County Agricultural Preservation and Open Space District [Ag + Open Space] 2019a, 2019b; Ag + Open Space and Sonoma County Water Agency 2017a, 2017b, 2017c, 2017d). All vegetation classifications made were cross-walked with wildlife habitats based on the descriptions provided by CDFW's California Wildlife Habitat Relationship (CWHR) types (as adapted from Mayer and Laudenslayer's 1988 *A Guide to Wildlife Habitats*) (CDFW 2014).

The CDFW considers riparian habitat to be a sensitive natural community. To map riparian habitat in the BSA, SWCA biologists selected all MCV natural vegetation communities dominated by plant species typically found in riparian systems and then generated a crosswalk of those riparian alliances to those most representative to the segment within the BSA. This crosswalk including all classifications found in the BSA is included below in the Section 6, *Results* (Table 5).

## *5.3.2 Aquatic Resource Surveys*

### 5.3.2.1 WATERS OF THE UNITED STATES AND STATE DELINEATIONS

SWCA biologists conducted on-site routine delineations and "other waters" of the United States and state on October 2, 3, and 4, 2023. Prior to conducting the field survey, existing information was reviewed, including aerial imagery, soil survey data (NRCS 2023b), and NWI maps (USFWS 2023b). The jurisdictional boundaries of the aquatic resources were mapped according to the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), as supplemented in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Regional Supplement; USACE 2008). For linear water features containing an ordinary high water mark (OHWM), the delineators used the *National Ordinary High Water mark Field Delineation Manual for Rivers and Streams (Interim Version)* (David et al. 2022). For an area to be defined as a wetland under normal circumstances, the USACE routine field determination methods call for the presence of three parameters: hydrophytic vegetation, hydric soils, and wetland hydrology.

All potential wetlands and the boundaries of aquatic resources were mapped using a Global Positioning System (GPS) unit with submeter accuracy. All spatial data were collected in the World Geodetic System 1984 (WGS84) coordinate system. Photographs were also taken at each sample point. Descriptions of each sampling point were recorded using Wetland Determination Data Forms for the Arid West Region and descriptions of each OHWM were recorded using Rapid Ordinary High Water Mark Data Forms. Inaccessible areas were digitized using geographic information systems (GIS) and available aerial imagery and contour data.

### *5.3.3 Special-Status Species Assessments*

#### 5.3.3.1 BOTANICAL SURVEYS

No protocol-level botanical surveys were conducted for this project based on fall survey timing. As reconnaissance-level habitat surveys were conducted in the BSA, the potential for special-status plant species was evaluated based on the presence or absence of suitable habitat within the BSA. See Section 8.2, *Species-Specific Measures*, for recommended botanical surveys within the BSA. A full list of plant species observed within the BSA is included in Appendix E.

#### 5.3.3.2 WILDLIFE SURVEYS

SWCA biologists conducted a reconnaissance-level survey of the BSA on October 2, 3, and 4, 2023, to evaluate the presence or absence of sensitive biological resources, including suitable habitat for special-status species determined to have the potential to occur in the BSA. Where accessible, SWCA biologists walked the length of each road segment in the BSA and documented suitable habitat (e.g., burrows) and active bird nests. Areas adjacent to road segments that were inaccessible or located on private property were surveyed visually with binoculars or through desktop aerial review, unless otherwise noted. A list of wildlife observed during the field survey was also recorded and is included in Appendix E.

# 6 RESULTS

## 6.1 Natural Communities and Other Land Covers

### *6.1.1 Natural Communities*

SWCA mapped 17 MCV natural vegetation communities (CDFW 2023b) in the BSA to the alliance or association level where applicable; CDFW considers seven (of those classified to the alliance level) sensitive natural vegetation communities. Land covers not defined as natural were classified into seven land cover types in the BSA. As a crosswalk of these communities for wildlife habitat, SWCA also identified 17 CWHR habitat communities. Table 5 lists all vegetation communities mapped by SWCA within the BSA, as well as a crosswalk with MCV alliances, CWHR, and Sonoma County vegetation classification data sources from past projects. Table 6 lists the natural communities and land covers within each road segment.

Section 6.1.1.1, *Upland Natural Communities*, and Section 6.1.1.2, *Aquatic and Riparian Natural Communities*, provide additional descriptions of the vegetation communities mapped by SWCA within the BSA during the reconnaissance-level surveys Additionally, Section 6.1.2, *Other Land Cover Types*, provides additional descriptions of the other land cover types identified and mapped by SWCA within the BSA.

**Table 5. Natural Communities and Crosswalk to Other Land Covers in the BSA**

| Sonoma Veg Map Final Report in 2019[1] | Sonoma County Vegetation and Habitat Maps 2017[2] | CWHR[3] | CA Natural Community List[4] (* Association Considered Sensitive) | Vegetation Communities/Land Cover Types Mapped by SWCA within the BSA[5] |
|---|---|---|---|---|
| Urban Window | Developed and Built Up | Urban | None Recognized | **Urban** |
| Major Roads | Developed and Built Up | None Recognized (Urban is closest) | None Recognized | **Developed** |
| Intensively Managed Hayfield | Agriculture | Irrigated Hayfield | None Recognized | **Intensively Managed Hayfield** |
| Annual Cropland | Agriculture | Irrigated Row and Field Crops | None Recognized | **Annual Cropland** |
| Orchard or Grove | Agriculture | Deciduous Orchard | None Recognized | **Orchard or Grove** |
| Vineyard | Agriculture | Vineyard | None Recognized | **Vineyard** |
| *Baccharis pilularis* Shrubland Alliance | Shrub | Coastal Scrub | Coyote brush scrub | **Coyote Brush Scrub** |
| California Annual and Perennial Grassland Macgroup | Herbacous | Annual Grassland or Perennial Grassland | None Recognized | **Grassland** |
| *Avena* spp. – *Bromus* spp. Semi-Natural Alliance; *Avena barbata* – *Avena fatua* Semi-natural Association | Herbacous | Annual Grassland | Wild oats and annual brome grasslands | **Grassland** |
| *Eucalyptus (globulus, camaldulensis)* Semi-natural Alliance*; Eucalyptus* ssp. – *Ailanthus altissima* – *Robinia pseudoacacia* Semi-Natural Alliance (eucalyptus – tree of heaven – black locust groves) | Non-native Forest and Shrub | Eucalyptus | Eucalyptus – tree of heaven – black locust groves | **Eucalyptus – tree of heaven – black locust groves** |
| Non-Native Forest and Woodland | Non-native Forest and Shrub | Urban or Eaucalyptus (depending on species and composition) | None Recognized | **Non-Native Forest and Woodland** |
| *Notholithocarpus densiflorus* Alliance | Hardwood | Montane Hardwood | Tanoak Forest* | **Tanoak Forest** |
| *Arbutus menziesii* Alliance | Hardwood | Coastal Oak Woodland | Madrone Forest* | **Madrone Forest** |
| *Pseudotsuga menziesii* Alliance*; Pseudotsuga menziesii – Quercus agrifolia* Association; *Pseudotsuga menziesii – Umbellaria californica* / (*Toxicodendron diversilobum*) Assocaition; *Pseudotsuga menziesii – Arbutus menziesii* Association | Conifer | Douglas- Fir | Douglas Fir Forest and Woodland* (except for *Umbellaria/ Toxicodendron* Association) | **Douglas Fir Forest and Woodland** |
| *Sequoia sempervirens* Alliance | Conifer | Redwood | Redwood Forest and Woodland* | **Redwood Forest and Woodland** |
| *Alnus rhombifolia* Alliance*; Alnus rhombifola – Platanus racemosa* Association; *Alnus rhombifolia – Acer macrophyllum* Alliance | Not Collected in Sample | Montane Riparian | White Alder Groves* (except the third alliance included) | **White Alder Groves** |

| **Sonoma Veg Map Final Report in 2019[1]** | **Sonoma County Vegetation and Habitat Maps 2017[2]** | **CWHR[3]** | **CA Natural Community List[4] (* Association Considered Sensitive)** | **Vegetation Communities/Land Cover Types Mapped by SWCA within the BSA[5]** |
|---|---|---|---|---|
| *Populus fremontii* Alliance | Riparian Forest | Valley Foothill Riparian | Freemont Cottonwood Forest and Woodland* | **Freemont Cottonwood Forest and Woodland** |
| *Quercus* (*agrifolia, douglasii, garryana, kelloggii, lobata, wislizenii*) Alliance*;* Mixed oak/ grass Association - Mixed oak/*Bachharis pilularis – Toxicodendron diversilobum* Association | Hardwood | Coastal Oak Woodland | Mixed Oak Forest and Woodland | **Mixed Oak Forest and Woodland** |
| *Quercus agrifolia* Alliance | Hardwood | Coastal Oak Woodland | Coast Live Oak Woodland and Forest | **Coast Live Oak Woodland and Forest** |
| *Quercus douglasii* Alliance | Hardwood | Blue Oak Woodland | Blue Oak Woodland and Forest | **Blue Live Oak Woodland and Forest** |
| *Umbellaria californica* Alliance | Hardwood | Coastal Oak Woodland | California Bay Forest and Woodland* | **California Bay Forest and Woodland** |
| *Salix exigua* Alliance; *Salix exigua* – (*Salix lasiolepis*) – *Rubus armeniacus* Association | Not Collected in Sample | Montane Riparian or Valley Foothill Riparian | Sandbar Willow Thickets | **Sandbar Willow Thickets** |
| *Salix lasiolepis* Alliance*; Salix lasiolepis – Rubus* spp. Association | Not Collected in Sample | Montane Riparian or Valley Foothill Riparian | Arroyo Willow Thickets* | **Arroyo Willow Thickets** |
| Southwestern North American Riparian Evergreen and Deciduous Woodland Group | Riparian Shrub | Valley Foothill Riparian | None Recognized | **Riparian (Other)** |
| Southwestern North American Riparian/Wash Scrub Group | Riparian Shrub | Valley Foothill Riparian | None Recognized | **Riparian (Other)** |
| Vancouveran Riparian Deciduous Forest Group | Riparian Shrub | Valley Foothill Riparian | None Recognized | **Riparian (Other)** |
| Western North America Freshwater Marsh Macrogroup | Herbaceous Wetland | Fresh Emergent Wetland | None Recognized | **Herbaceous Wetland** |

Sources:

[1] "Sonoma Veg Map Final Report in 2019" refers to the classification types mapped for the Sonoma Veg Map Final Report in 2019 (Ag + Open Space 2019a), which is based largely on classifications in the MCV classifications (Sawyer et al. 2009).

[2] "Sonoma County Vegetation and Habitat Maps 2017" refers to the classification types crosswalked to Sonoma County project data collected in 2017 (Ag + Open Space and Sonoma County Water Agency 2017a, 2017b, 2017c, 2017d).

[3] "CWHR" refers to the classification types crosswalked to the CDFW wildlife habitats (Mayer and Laudenslayer 1988; CDFW 2014). Technically, "urban" and all of the agricultural habitat types (e.g., cropland, dryland grain crops, irrigated hayfield, etc.) fall under the developed habitat macrogroup; however, there is no "developed" CWHR habitat type

[4] "California Natural Community List" refers to the classification types crosswalked to the CDFW sensitive natural communities list which is adapted from the MCV (CDFW 2023b).

[5] "Vegetation Communities/Land Cover Types Mapped by SWCA within the BSA" refers to what was included in the final Vegetation Mapping Figures, sourced from a blend of this crosswalk and collected in the field during SWCA's reconnaissance surveys.

**Table 6. Natural Communities/Land Cover Type by Road Segment**

| | Natural Communities | | | | | | | | | | | | | | | | | | | Other Land Cover Types | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Upland Natural Communities | | | | | | | | | | | Aquatic and Riparian Natural Communities | | | | | | | Urbanized and Developed Land | | | Agricultural Land | | | |
| Road Segment | Mixed Oak Forest and Woodland | Redwood Forest and Woodland | Coast Live Oak Woodland and Forest | Blue Oak Woodland | California Bay Forest and Woodlands | Douglas Fir Forest and Woodland | Madrone Forest | Tanoak Forest | Coyote Brush Scrub | Grassland | Eucalyptus Groves | Streambed (Riverine) | White Alder Groves | Freemont Cottonwood Forest and Woodland | Sandbar Willow Thickets | Arroyo Willow Thickets | Riparian (Other) | Herbaceous Wetland | Non-Native Forest and Woodland | Urban | Developed | Intensively Managed Hayfield | Annual Cropland | Orchard or Grove | Vineyard |
| Bloomfield Road | | | | | | | | | | X | X | X | | | X | | X | X | | X | X | X | X | | |
| Casa Grande Road | | | | | | | | | | X | X | X | | | | | X | | X | X | X | | | | |
| Corona Avenue | | | | | | | | | | | | X | | | X | | X | | | X | X | | | | |
| Fort Ross Road | X | X | | | X | | | X | | X | | X | | | | | X | | | | X | | | | |
| King Road | X | | X | | | | | | | X | X | X | | | | | X | | X | X | X | X | | X | X |
| Lichau Road | X | | | | X | | | | | X | | | | | | | | | | | X | X | X | | |
| Morelli Lane | X | X | X | | | X | | | X | X | | X | X | | | X | | | X | X | X | | | X | X |
| Nuns Canyon Road | X | X | X | X | | X | X | | X | X | X | X | | | | | X | | | | X | | | | |
| Petaluma Hill Road | | | | | | | | | | X | | X | | | | | X | | | X | X | X | | | |
| Santa Rosa Avenue | | | | | | | | | | X | | X | | | | | X | X | | X | X | | | | |
| Sonoma Mountain Road | X | X | X | | | | | | | X | X | X | | X | | | | X | | X | X | | | | X |
| Woodward Avenue | | | X | | | | | | | | | | | | | | | | | X | X | | | | |

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#### 6.1.1.1 UPLAND NATURAL COMMUNITIES

##### 6.1.1.1.1 Mixed Oak Forest and Woodland

Mixed Oak Forest and Woodland occurs along Fort Ross Road, King Road, Lichau Road, Morelli Lane, Nuns Canyon Road and Sonoma Mountain Road. This community meets the membership for the *Quercus* (*agrifolia, douglasii, garryana, kelloggii, lobata, wislizenii*) Alliance (CNPS 2023a). This community is dominated by an assemblage of oak tree species that may include coast live oak (*Quercus agrifolia*), blue oak (*Q. douglasii*), Oregon oak (*Q. garryana*), California black oak (*Q. kelloggii*), valley oak (*Q. lobata*) and/or interior live oak (*Q. wislizeni*). These oaks may be co-dominant in the tree canopy with other tree species, including California buckeye (*Aesculus californica*), madrone (*Arbutus menziesii*), foothill pine (*Pinus sabiniana*), Douglas fir (*Pseudotsuga menziesii*) and California bay laurel (*Umbellularia californica*). This community can be further categorized as Mixed oak/grass Association or Mixed oak/*Bachharis pilularis – Toxicodendron diversilobum* Association (CDFW 2023b), depending on whether the understory is dominated by grasses or shrubs such as coyote brush (*Bachharis pilularis*) or poison oak (*Toxicodendron diversilobum*).

##### 6.1.1.1.2 Redwood Forest and Woodland

Redwood Forest and Woodland occurs along Fort Ross Road, Morelli Lane, Sonoma Mountain Road, and Nuns Canyon Road. This community meets the membership rules of the *Sequoia sempervirens* Alliance (CNPS 2023a). Within this community coast redwood (*Sequoia sempervirens*) is dominant or is co-dominant in the tree canopy with grand fir (*Abies grandis*), bigleaf maple (*Acer macrophyllum*), red alder (*Alnus rubra*), madrone, golden chinquapin (*Chrysolepis chrysophylla*), tanoak (*Notholithocarpus densiflorus*), Sitka spruce (*Picea sitchensis*), Douglas fir, western hemlock (*Tsuga heterophylla*), or California bay laurel. Redwood Forest and Woodland is considered a sensitive community by CDFW (CDFW 2023b).

##### 6.1.1.1.3 Coast Live Oak Woodland and Forest

Coast Live Oak Woodland and Forest occurs along King Road, Lichau Road, Nuns Canyon Road, Sonoma Mountain Road, and Woodward Avenue. This community meets the membership rules for the *Quercus agrifolia* Alliance (CNPS 2023a). Coast live oak is dominant or co-dominant in the upland tree canopy along with bigleaf maple, madrone, California black walnut (*Juglans californica*), blue oak, California black oak, valley oak, or California bay laurel. Coast Live Oak Woodland and Forest is not considered a sensitive community (CDFW 2023b).

##### 6.1.1.1.4 Blue Oak Woodland and Forest

Blue Oak Woodland and Forest occurs along Nuns Canyon Road. This community meets the membership rules for the *Quercus douglasii* Alliance (CNPS 2023a). Blue oak is dominant or co-dominant in the tree canopy along with California buckeye, California juniper (*Juniperus californica*), foothill pine, and coast live oak. Blue Oak Woodland and Forest it not considered a sensitive community (CDFW 2023b).

##### 6.1.1.1.5 California Bay Forest and Woodlands

California Bay Forest and Woodlands occurs along Fort Ross Road and Lichau Road. This community meets the membership rules for the *Umbellaria californica* Alliance (CNPS 2023a). California bay laurel is dominant or co-dominant in the tree or tall shrub canopy along with bigleaf maple, California buckeye, alders (*Alnus* sp.), madrone, beaked hazelnut (*Corylus cornuta*), California black walnut, tanoak, foothill pine, California sycamore (*Platanus racemosa*), Douglas fir, various species of oak (*Quercus* sp.), or coast redwood. California Bay Forest and Woodland is considered a sensitive community by CDFW (CDFW 2023b).

#### 6.1.1.1.6 Douglas Fir Forest and Woodland

Douglas Fir Forest and Woodland occurs along Fort Ross Road and Nuns Canyon Road. This community meets the membership rules for the *Pseudotsuga menziesii* Alliance. Douglas fir is the dominant tree species in the canopy. However, other hardwoods may also be co-dominant in canopy, including tanoak, madrone, or various species of oak (CNPS 2023a). This community can be further categorized as *Pseudotsuga menziesii – Quercus agrifolia* Association, *Pseudotsuga menziesii – Umbellularia californica / (Toxicodendron diversilobum)* Association, or *Pseudotsuga menziesii – Arbutus menziesii* Association depending on which tree and shrub species are co-dominant in the canopy (CDFW 2023b). Douglas Fir Forest and Woodland is considered a sensitive community by the CDFW, except for when it occurs as *Pseudotsuga menziesii – Umbellularia californica / (Toxicodendron diversilobum)* Association (CDFW 2023b).

#### 6.1.1.1.7 Madrone Forest

Madrone Forest occurs along Nuns Canyon Road. This community meets the membership rules for the *Arbutus menziesii* Forest Alliance. Madrone is the dominant or co-dominant tree in the canopy along with bigleaf maple, tanoak, Douglas fir, various species of oak, and California bay laurel (CNPS 2023a). Madrone Forest is considered a sensitive community by the CDFW (CDFW 2023b).

#### 6.1.1.1.8 Tanoak Forest

Tanoak Forest occurs along Fort Ross Road. This community meets the membership rules for the *Notholithocarpus densiflorus* Forest Alliance. Tanoak is the is the dominant or co-dominant tree in the canopy along with a variety of broad-leafed trees such as bigleaf maple, alder, madrone, incense cedar, golden chinquapin, Pacific dogwood (*Cornus nuttallii*), oaks, and California bay laurel or conifers such as Coulter pine (*Pinus coulteri*), sugar pine (*Pinus lambertiana*), Douglas fir, redwood, and western hemlock (CNPS 2023b). Tanoak Forest is considered a sensitive community by CDFW (CDFW 2023b).

#### 6.1.1.1.9 Coyote Brush Scrub

Coyote Brush Scrub occurs in the BSA, limited to the Morelli Lane Road and Nuns Canyon Road. Coastal scrub is the CWHR habitat type crosswalked for these stand in the BSA. It meets membership for the *Baccharis pilularis* Shrubland Alliance (Coyote brush scrub) and at this level, it not considered a sensitive community (CNPS 2023a; CDFW 2023b).

#### 6.1.1.1.10 Grasslands

Grasslands occur along every road segment except for Corona Avenue and Woodward Avenue. As many grasslands were inaccessible at the time of the field survey, grasslands were largely identified to the California Annual and Perennial Grassland Macrogroup level as both annual grasslands and perennial grasslands were present. When identifiable, some wild oat and annual brome grasslands (*Avena* spp. – *Bromus* spp. *Semi-Natural Alliance; Avena barbata – Avena fatua Semi-natural Association*) were identified along Bloomfield Road and Casa Grande Road (CNPS 2023a; CDFW 2023a). For the purposes and scale of this habitat suitability mapping project, areas were broadly classified as grasslands where vegetation was grazed on pasturelands but had some identifiable grasses that might provide habitat for dispersal species as the agricultural land use that was evaluated did not preclude potential habitat for dispersing listed species. Grasslands are not considered a sensitive community due to the dominance of non-native grasses (CDFW 2023b).

Other more urban areas with some grasses such as lawns that occurred in highly developed areas were included as urban (also referred to as "urban window") habitats when they were disjunct from riparian areas or otherwise not meeting classification into the grassland habitat type.

#### 6.1.1.1.11 Eucalyptus Groves

Eucalyptus Groves occur along Bloomfield Road, Casa Grande Road, King Road, Nuns Canyon Road, and Sonoma Mountain Road. This community meets the membership rules for the *Eucalyptus* spp. – *Ailanthus altissima* – *Robinia pseudoacacia* Woodland Semi-Natural Alliance (CNPS 2023a). Within the BSA, this community is dominated by species of eucalyptus trees (*Eucalyptus* spp.) are not considered a sensitive community due to dominance of non-native tree species (CDFW 2023b).

### 6.1.1.2 AQUATIC AND RIPARIAN NATURAL COMMUNITIES

#### 6.1.1.2.1 Streambed (Riverine)

Streambed (or Riverine) consists of the wetted portions of a stream channel. This includes the streambed of perennial, intermittent, and ephemeral streams. Perennial, intermittent, and ephemeral channels are not defined under federal law or regulation. The USEPA describes perennial, intermittent, and ephemeral channels as follows:

- "Year-round streams (perennial) typically have water flowing in them year-round. Most of the water comes from smaller upstream waters or groundwater while runoff from rainfall or other precipitation is supplemental" (USEPA 2023).
- "Seasonal streams (intermittent) flow during certain times of the year when smaller upstream waters are flowing and when groundwater provides enough water for stream flow. Runoff from rainfall or other precipitation supplements the flow of seasonal stream. During dry periods, seasonal streams may not have flowing surface water. Larger seasonal streams are more common in dry areas" (USEPA 2023).
- "Rain-dependent streams (ephemeral) flow only after precipitation. Runoff from rainfall is the primary source of water for these streams. Like seasonal streams, they can be found anywhere but are most prevalent in arid areas" (USEPA 2023).

Non-perennial streambeds can be unvegetated or may contain hydrophytic vegetation depending on the length and frequency of inundation. Streambed (or Riverine) occurs along every road segment except for Lichau Road and Woodward Avenue.

#### 6.1.1.2.2 White Alder Groves

White alder groves occur in riparian areas along Morelli Lane. This community meets the membership rules for the *Alnus rhombifolia* Forest and Woodland Alliance (CNPS 2023a). White alder (*Alnus rhombifolia*) is dominant or co-dominant in the tree canopy along with other riparian trees species such as bigleaf maple, California sycamore, cottonwoods (*Populus* sp.), willows (*Salix* sp.), oaks, or California bay laurel. White alder groves are considered a sensitive community by CDFW (CDFW 2023b).

#### 6.1.1.2.3 Freemont Cottonwood Forest and Woodland

Freemont Cottonwood Forest and Woodland occurs in riparian areas along Sonoma Mountain Road. This community meets the membership rules for the *Populus fremontii – Fraxinus velutina – Salix gooddingii* Forest and Woodland Alliance (CNPS 2023a). Fremont cottonwood (*Populus fremontii*) is dominant or co-dominant in the tree canopy along with maples (*Acer* sp.), ashes (*Faxinus* sp.), walnut (*Juglans* sp.),

California sycamore, oaks, and various species of willow. Freemont Cottonwood Forest and Woodland is considered a sensitive community by CDFW (CDFW 2023b).

#### 6.1.1.2.4 Sandbar Willow Thickets

Sandbar Willow Thickets occur in riparian areas along Bloomfield Road and Corona Road. This community meets the membership rules for the *Salix exigua* Shrubland Alliance (CNPS 2023a). Sandbar willow (*Salix exigua*) is dominant or co-dominant in the shrub canopy with shrubs of the *Baccharis* genus, California brickellbush (*Brickellia californica*), California wild rose (*Rosa californica*) blackberry (*Rubus* sp.) or other species of willow. Sandbar Willow Thickets it not considered a sensitive community (CDFW 2023b).

#### 6.1.1.2.5 Arroyo Willow Thickets

Arroyo Willow Thickets occur in riparian areas along Morelli Lane. This community meets the membership rules for the *Salix lasiolepis* Shrubland Alliance (CNPS 2023a). Arroyo willow (*Salix lasiolepis*) is dominant or co-dominant in the tall shrub or low tree canopy with species such as bigleaf maple, California button-willow (*Cephalanthus occidentalis* var. *californicus*), dogwood (*Cornus* sp.), California wax myrtle (*Myrica californica*), California sycamore, cottonwoods, and elderberry (*Sambus* sp.). Emergent trees may be present at low cover (CNPS 2023a). Arroyo Willow Thickets is considered a sensitive community by CDFW (CDFW 2023b).

#### 6.1.1.2.6 Riparian (Other)

Riparian (Other) includes riparian vegetation communities present within the BSA that are not able to be categorized under the vegetation alliance classification system as described in *A Manual of California Vegetation* (Sawyer et al. 2009). Instead, these riparian communities are defined following classifications schemes utilized by Sonoma County (Klein et al. 2015a, 2015b; Ag + Open Space 2019a, 2019b; Ag + Open Space and Sonoma County Water Agency 2017a, 2017b, 2017c, 2017d). These vegetation communities include:

1. Southwestern North American Riparian Evergreen and Deciduous Woodland Group
2. Southwestern North American Riparian/Wash Scrub Group
3. Vancouveran Riparian Deciduous Forest Group

These vegetation communities occur along every road segment except for Lichau Road, Morelli Lane, Sonoma Mountain Road, and Woodward Avenue.

#### 6.1.1.2.7 Herbaceous Wetlands

A delineated herbaceous wetland is present within the stream channel of a channelized drainage near the southern end of Santa Rosa Avenue (Appendix F: Figure F-18). Additionally, two smaller seasonal wetlands (less than 0.1 acre) can be found within roadside ditches along Bloomfield Road and Sonoma Mountain Road, respectively, and can be referenced in the concurrently prepared PJD (SWCA 2024). These herbaceous wetlands were dominated by hydrophytic grasses and herbaceous species such as sweet vernal grass (*Anthoxanthum odoratum*), common rush (*Juncus effusus*), tall flatsedge (*Cyperus eragrostis*), and bulrush (*Typha* sp.). However, based on the scope, extent, and type of proposed project activities, habitat suitability impact assessments in this BRE were sufficiently evaluated at the higher level Macrogroup level for grasslands, with the minimum mapping unit (MMU) for vegetation mapping for this project established at approximately 0.25 acre for fine-level herbaceous plant communities. Therefore, these herbaceous wetland vegetation communities were not mapped as seasonal wetlands and are included in the vegetation community in which they occur (e.g., grassland).

## *6.1.2 Other Land Cover Types*

### 6.1.2.1 URBANIZED AND DEVELOPED LAND

Urbanized and developed land includes areas that contain significant human-made impervious cover or are highly altered by man. Highly altered areas include lawns, heavily landscaped garden and patio areas, bocce courts, tennis courts, sport courts, developed horse riding arenas, baseball fields, soccer fields, swimming pools, and playground areas (Ag + Open Space 2019b). To evaluate habitat suitability potential for listed species, three subtypes of urbanized and developed land were classified in the BSA, including non-native forest and woodland, urban, and developed.

#### 6.1.2.1.1 Non-Native Forest and Woodland

Non-Native Forest and Woodland is defined as stands dominated by non-native, ornamental, or landscaping trees. Common non-native trees throughout Sonoma County include eucalyptus, Monterey pine (*Pinus radiata*), and Monterey cypress (*Hesperocyparis macrocarpa*) (Ag + Open Space 2019b). However, for the purpose of this report, all non-native ornamental vegetation types are mapped as a single, generic landcover type. Non-Native Forest and Woodland occurs along Casa Grande Road, King Road, and Morelli Lane.

#### 6.1.2.1.2 Urban

Urban land cover type refers to developed areas inside of the "Urban Window," which fully encompasses developed areas that are part of an urban core within Sonoma County. The urban window does not include large city parks and riparian corridors that cross urban areas (Ag + Open Space 2019b). Urban land cover occurs along every road segment except for Fort Ross Road, Lichau Road, and Nuns Canyon Road and consists of residential, commercial, and other human-made structures.

#### 6.1.2.1.3 Developed

Developed land cover types includes areas that are designated as "major roads," which are derived from Sonoma County GIS road data (Ag + Open Space 2019b). Developed land cover consists of paved roads and other paved surfaces that occur within the BSA and along all road segments.

### 6.1.2.2 AGRICULTURAL LAND

Agricultural land consists of areas where one or more layers of the vegetation's structure and/or composition are determined by human agricultural activities such as planting, tilling, cropping, mowing, harvesting, and/or irrigating (Ag + Open Space 2019b). To evaluate habitat suitability potential for listed species, four subtypes of agriculture were classified in the BSA, including irrigated hayfield, irrigated row and field crops, orchard, and vineyard.

#### 6.1.2.2.1 Intensively Managed Hayfield

Intensively managed hayfields are areas agricultural areas that are mechanically turned over every year (Ag + Open Space 2019b). These areas can often be mistaken for naturally occurring non-native grassland habitats; however, these areas are subject to more regular disturbance and contain a lower diversity of grass and herb species. Intensively managed hayfields occur along Bloomfield Road, King Road, Lichau Road, and Petaluma Hill Road.

#### 6.1.2.2.2 Annual Cropland

Annual Cropland includes areas of irrigated agricultural land dedicated to the cultivation of vegetable crops (Ag + Open Space 2019b). Annual Cropland occurs along Bloomfield Road and Lichau Road.

#### 6.1.2.2.3 Orchard or Grove

Orchards or groves are areas of agricultural land dedicated to the cultivation of fruit or nut trees (Ag + Open Space 2019b). Orchards occur along King Road and Morelli Lane.

#### 6.1.2.2.4 Vineyard

Vineyards are areas of agricultural land dedicated to the cultivation of wine grapes (Ag + Open Space 2019b). Vineyards are among the most common types of agricultural land found in Sonoma County. Vineyards occur along King Road, Morelli Lane, and Sonoma Mountain Road.

## 6.2 Special-Status Species

### *6.2.1 Special-Status Plants*

The background research conducted for this BRE resulted in 80 special-status plants that have a potential to occur in the project area, as described in Table C-1 (see Appendix C). Table C-1 describes each species' preferred habitat, status, and potential to occur. Twelve special-status plants are likely to occur in the project areas based on habitat suitability (e.g., soils, elevation, vegetation communities, etc.), proximity of recent occurrences, and species' geographic ranges. Among these 12 species likely to occur, two species—Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*) and two-fork clover (*Trifolium amoenum*)—are federally listed under the FESA. The remaining 66 plant species listed in Table C-1 are either unlikely to occur, have no potential to occur, or are absent and will not be discussed further in this document. Table 7 illustrates the potential for each species to occur by road segment. The special-status plant species that are present or were determined to be likely to occur are discussed in the sections that follow.

While paved roads typically do not project suitable habitat for special-status plants, each plant species' potential to occur was determined whether suitable habitat is present adjacent to the road segment in question (such as grasslands, oak woodland, redwood forest, etc.) Additionally, some special-status species are tolerant of disturbed areas and often occur along road shoulders. Roadside ditches sometimes contain similar conditions to seasonal wetlands and therefore species that typically occur in such wetlands have the potential to occur within these ditches as well. Many of project road segments cross or lie adjacent to riparian habitats. Therefore, special-status plants that are known to occur in riparian habitats are considered to have potential to occur as well.

**Table 7. Special-Status Plants Likely to Occur by Road Segment**

| **Species Name** ***(Scientific Name)*** | **Legal Status Federal/ State/CNPS Status** | **Bloomfield Road** | **Casa Grande Road** | **Corona Avenue** | **Fort Ross Road** | **King Road** | **Lichau Road** | **Morelli Lane** | **Nuns Canyon Road** | **Petaluma Hill Road** | **Santa Rosa Avenue** | **Sonoma Mountain Road** | **Woodward Avenue** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| angel's hair lichen (*Ramalina thrausta*) | --/--/2B.1 | | | | X | | | | | | | | |
| Colusa layia (*Layia septentrionalis*) | --/--/1B.2 | | | | | | | | | | | X | |
| congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*) | --/--/1B.2 | X | X | | | X | X | X | X | X | | X | |
| Crystal Springs lessingia (*Lessingia arachnoidea*) | --/--/1B.2 | | | | | | | X | | | | | |
| fragrant fritillary (*Fritillaria liliacea*) | --/--/1B.2 | | X | | | | | X | | | | X | |
| Franciscan onion (*Allium peninsulare* var. *franciscanum*) | --/--/1B.2 | | X | | | | | | X | | | X | |
| Greene's narrow-leaved daisy (*Erigeron greenei*) | --/--/1B.2 | | | | | | | X | | | | | |
| Jepson's leptosiphon (*Leptosiphon jepsonii*) | --/--/1B.2 | | | | | | X | | X | | | X | |
| Napa false indigo (*Amorpha californica* var. *napensis*) | --/--/1B.2 | | | | X | | | | X | | | X | |
| narrow-anthered brodiaea (*Brodiaea leptandra*) | --/--/1B.2 | | | | | | | | X | | | | |
| Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*) | FE/--/1B.1 | X | | | | | | X | | X | | X | |
| two-fork clover (*Trifolium amoenum*) | FE/--/1B.1 | X | | | | | | | | | | | |

Status Codes:
-- = No status
Federal: FE = Federal Endangered

*CNPS Rare Plant Ranks:*
List 1B = Rare, threatened, or endangered in California and elsewhere
List 2B = Plants rare, threatened, or endangered in California but common elsewhere

*Threat Ranks:*
_.1 = Seriously endangered in California (more than 80% of occurrences threatened / high degree and immediacy of threat)
_.2 = Fairly endangered in California (20–80% occurrences threatened)

#### 6.2.1.1 FESA-LISTED PLANTS

##### 6.2.1.1.1 Sonoma Alopecurus (*Alopecurus aequalis* var. *sonomensis*)

Sonoma alopecurus is a perennial grass-like herb that occurs in freshwater wetlands and riparian scrub below 1,200 feet in elevation. This species federally listed as endangered and has a CNPS Rank of 1B.1 (CNPS 2023b). Riparian scrub habitat is present along Morelli Lane and a roadside wetland is present along Bloomfield Road, which may provide suitable habitat. There are three records of this species within 2 miles of the Morelli Lane project area. The nearest and most recent record is from 1987 and is located 0.8 mile south in open, marshy ground. There is one record of this species from 1880 that is located within Bloomfield Road; however, the exact location is unknown (CDFW 2023a).

##### 6.2.1.1.2 Two-Fork Clover (*Trifolium amoenum*)

Two-fork clover is an annual herb that occurs usually in wetlands, occasionally in non-wetlands including coastal bluff scrub, valley and foothill grasslands below 1,360 feet in elevation. It may sometimes occurs in serpentinite areas. This species federally listed as endangered and has a CNPS Rank of 1B.1 (CNPS 2023b). Limited suitable wetland habitat is present in the BSA. However, the roadside wetland present along the shoulder of Bloomfield Road which may provide suitable habitat. There is one record of this species from 2002 that is located 1.32 miles west of the Bloomfield Road project area within coastal bluff grassland. There is another record of this species from 1928 that is located 1.06 miles northwest of Nuns Canyon Road. However, the exact location of this record is unknown. There is third record of this species from 1938 that is located 1.25 miles northwest of King Road. Again, the exact location of this record is unknown (CDFW 2023a).

#### 6.2.1.2 OTHER SPECIAL-STATUS PLANTS

##### 6.2.1.2.1 Angel's Hair Lichen (*Ramalina thrausta*)

Angel's hair lichen (*Ramalina thrausta*) is a fruticose epiphytic lichen that occurs in North Coast coniferous forest on dead twigs and other lichens at elevations between 245 and 1,410 feet. This species has a CNPS Rank of 2B.1 (CNPS 2023b). Suitable habitat is present along Fort Ross Road and there is one record of this species from 2004 that is located within the Fort Ross Road project area. This record is located between the road and the adjacent stream (CDFW 2023a).

##### 6.2.1.2.2 Colusa Layia (*Layia septentrionalis*)

Colusa layia (*Layia septentrionalis*) is an annual herb that occurs in foothill woodlands, chaparral, and valley grasslands often in serpentine or sandy soils at elevations between 330 and 3,595 feet. This species has a CNPS Rank of 1B.2 (CNPS 2023b). Suitable habitat is present along Sonoma Mountain Road and there is one record of this species from 2015 that is located 1.95 miles northeast of Sonoma Mountain Road project area. However, the exact location is unknown (CDFW 2023a).

##### 6.2.1.2.3 Congested-Headed Hayfield Tarplant (*Hemizonia congesta* ssp. *congesta*)

Congested-headed hayfield tarplant(*Hemizonia congesta* ssp. *congesta*) is an annual herb that occurs in northern coastal scrub, woodlands, and valley grasslands at elevation between 65 and 1,835 feet. This species has a CNPS Rank of 1B.2 (CNPS 2023b). Suitable habitat is present along every road segment except for Corona Road, Fort Ross Road, Santa Rosa Avenue, and Woodward Avenue. There is one record of this species from 2007 that is located 0.7 mile southwest of the Bloomfield Road project area around a small rocky gully facing annual grassland. There is one record of this species from 1930 that is

located 1.6 miles southwest of the Casa Grande Road project area (exact location unknown). There is one record of this species from 1961 that is located 1.77 miles southwest of King Road (exact location is unknown). There is one record of this species from 2015 that is located 0.1 mile north of Morelli Lane found on serpentine substrate. There is one record of this species from 2013 that is located 0.53 mile south of Sonoma Mountain Road found alongside grassland (CDFW 2023a). There are records of this species in the vicinity of Corona Road and Woodward Avenue (CDFW 2023a). However, this species is unlikely to occur in the vicinity of Corona Road and Woodward Avenue because these areas are highly urbanized and developed.

#### 6.2.1.2.4 Crystal Springs Lessingia (*Lessingia arachnoidea*)

Crystal Springs lessingia (*Lessingia arachnoidea*) is an annual herb that occurs in serpentine soils in coastal scrub, woodlands, and valley grasslands at elevations between 195 and 655 feet. This species has a CNPS Rank of 1B.2 (CNPS 2023b). Suitable habitat is present along Morelli Lane, including serpentinite soils (NRCS 2023). There is one record of this species from 1996 that is located 1.7 miles northwest of the Morelli Lane project area found at a large serpentine outcrop (CDFW 2023a).

#### 6.2.1.2.5 Fragrant Fritillary (*Fritillaria liliacea*)

Fragrant fritillary (*Fritillaria liliacea*) is a perennial herb that occurs in cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland. It often occurs in serpentinite areas at elevations above 1,345 feet. This species has a CNPS Rank of 1B.2 (CNPS 2023b). Suitable habitat is present along Casa Grande Road, Morelli Lane, and Sonoma Mountain Road. There is one record of this species from 1880 that is located 1.7 miles southwest of the Casa Grande Road project area (exact location unknown). There is one record of this species from 2013 that is located 0.45 mile east of Santa Rosa Avenue, found within serpentine grassland and chapparal. There is one record of this species from an unknown date that is located 1.25 miles southeast of Sonoma Mountain Road (exact location unknown). There are records of this species in the vicinity of Corona Road and Santa Rosa Avenue (CDFW 2023a). However, this species is unlikely to occur in the vicinity of Corona Road and Santa Rosa Avenue because these areas are highly urbanized and developed.

#### 6.2.1.2.6 Franciscan Onion (*Allium peninsulare* var. *franciscanum*)

Franciscan onion (*Allium peninsulare* var. *franciscanum*) is a perennial herb that occurs in cismontane woodland, valley and foothill grassland. This species can often be found growing within clay serpentinite and volcanic soils at elevations between 170 and 1,000 feet. This species has a CNPS Rank of 1B.2 (CNPS 2023b). Suitable habitat is present along Casa Grande Road, Nuns Canyon Road, and Sonoma Mountain Road. There is one record of this species from 1950 that is located 1.7 miles northeast of Sonoma Mountain Road (exact location unknown). There is one record of this species from 1950 that is located 1.75 miles west of Nuns Canyon Road (exact location unknown). There is one record of this species from 1880 that is located 1.7 miles southwest of Casa Grande Road. The exact location is unknown. There is one record of this species in the vicinity of Corona Road (CDFW 2023a). However, this species is unlikely to occur in the vicinity of Corona Road because this area is highly urbanized and developed.

#### 6.2.1.2.7 Greene's Narrow-Leaved Daisy (*Erigeron greenei*)

Greene's narrow-leaved daisy (*Erigeron greenei*) is a perennial herb that occurs on serpentine and rocky alluvium in chaparral, woodlands, and conifer forests at elevations between 260 and 3,295 feet. This species has a CNPS Rank of 1B.2 (CNPS 2023b). Suitable habitat is present along Morelli Lane, including serpentinite soils (NRCS 2023). There are two records of this species located within 2 miles of

the project at Morelli Lane. The most recent and closest record is from 1947 and is located within the project area (CDFW 2023a).

#### 6.2.1.2.8 Jepson's Leptosiphon (*Leptosiphon jepsonii*)

Jepson's leptosiphon (*Leptosiphon jepsonii*) is an annual herb that usually occurs in volcanic soils within chaparral, cismontane woodland, and valley and foothill grassland at elevations between 330 and 1,640 feet. This species has a CNPS Rank of 1B.2 (CNPS 2023b). Suitable habitat is present along Lichau Road, Sonoma Mountain Road, and Nuns Canyon Road. However, volcanic soils are not present along Lichau Road (NRCS 2023). There is one record of this species from 1981 that is located 1.8 miles west of Lichau Road (exact location unknown). There are two records of this species located within 2 miles of the project at Sonoma Mountain Road, the most recent of which is from 2016 and located approximately 1.61 miles northeast of the project area. However, the closest record to the project is from 1981 and is located 0.8 mile south of the project area. There are three records of this species located within 2 miles of the project at Nuns Canyon Road, with the most recent and closest record from 2006 and located 0.9 mile northwest of the project area. This record was mapped along hills and flat areas around drainage (CDFW 2023a).

#### 6.2.1.2.9 Napa False Indigo (*Amorpha californica* var. *napensis*)

Napa false indigo (*Amorpha californica* var. *napensis*) is a shrub that occurs in openings within broad-leafed upland forest, chaparral, and cismontane woodland at elevations 165 between 6,560 feet. This species has a CNPS Rank of 1B.2 (CNPS 2023b). Suitable habitat is present along Fort Ross Road, Sonoma Mountain Road, and Nuns Canyon Road and there are records of this species in the vicinity of each of these road segments (CDFW 2023a).

#### 6.2.1.2.10 Narrow-Anthered Brodiaea (*Brodiaea leptandra*)

Narrow-anthered brodiaea (*Brodiaea leptandra*) is a perennial herb that occurs in open mixed-evergreen forest and chaparral in gravelly soils at elevations between 360 and 3000 feet. This species has a CNPS Rank of 1B.2 (CNPS 2023b). Suitable habitat is present along Nuns Canyon Road. There is one record of this species from 2008 that is located 1.5 miles southeast of the Nuns Canyon Road area found within chamise chaparral (CDFW 2023a).

### *6.2.2 Special-Status Wildlife*

Based on a CNDDB query and a review of existing literature, 33 special-status wildlife species were identified within 2 miles of the project area, as described in Table C-1 (see Appendix C). Table C-1 describes each species' preferred habitat, status, and potential to occur. Only one special-status species was observed during the field survey—steelhead (*Oncorhynchus mykiss irideus*) was observed during the October 2023 survey by SWCA biologists within the portion of Calabazas Creek, which occurs within the BSA adjacent to the Nuns Canyon Road project area.

SWCA evaluated these 33 species to identify which species have the potential to occur within the BSA. This analysis compared the known habitat requirements of those species to the BSA's existing conditions. Twelve of these species were determined to be likely to occur along any of the road segment project areas as illustrated in Table 8. Among these 12 species that are likely to occur, six are listed under the FESA and/or CESA. The remaining 21 species are either unlikely to occur, have no potential to occur, or are absent from the project area due to a lack of suitable foraging and/or breeding habitat, aestivating habitat, and/or other biotic considerations, or the BSA is outside of the species' current known range, and these species will not be discussed further in this document. The special-status wildlife species that are present or were determined to be likely to occur are discussed in the sections that follow.

**Table 8. Special-Status Wildlife Likely to Occur by Road Segment**

| **Species Name** ***(Scientific Name)*** | **Legal Status Federal/ State Status** | **Bloomfield Road** | **Casa Grande Road** | **Corona Avenue** | **Fort Ross Road** | **King Road** | **Lichau Road** | **Morelli Lane** | **Nuns Canyon Road** | **Petaluma Hill Road** | **Santa Rosa Avenue** | **Sonoma Mountain Road** | **Woodward Avenue** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sonoma tree vole (*Arborimus pomo*) | --/SSC | | | | X | | | X | | | | | |
| California giant salamander (*Dicamptodon ensatus*) | --/SSC | | | | X | | | X | X | | | X | |
| California red-legged frog (*Rana draytonii*) | FT/SSC | X | X | | X | X | X | | | | | X | |
| California tiger salamander Sonoma County DPS (*Ambystoma californiense*) | FE/ST | X | X | | | X | X | | | X | | | |
| foothill yellow-legged frog North Coast DPS (*Rana boylii*) | --/SSC | | X | | X | X | X | X | X | X | | X | |
| red-bellied newt (*Taricha rivularis*) | --/SSC | | X | | X | | | | X | | | X | |
| coho salmon **C**entral California Coast ESU (*Oncorhynchus kisutch*) | FE/SE | | | | X | | | | | | | | |
| steelhead Central California Coast DPS (*Oncorhynchus mykiss irideus*) | FT/-- | | | | X | | | | X | | | | |
| northern spotted owl (*Strix occidentalis caurina*) | FT/-- | | | | X | | | X | X | | | X | |
| saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*) | --/SSC | | X | | | | | | | | | | |
| tricolored blackbird (*Agelaius tricolor*) | --/ST, SSC | X | X | | | X | X | | | X | | | |
| white-tailed kite (*Elanus leucurus*) | --/FP | X | X | | | X | X | X | X | X | | X | |

Status Codes:
-- = No status
Federal: FE = Federal Endangered; FT = Federal Threatened;
State: SE = State Endangered; ST = State Threatened; SSC = California Species of Special Concern; FP = Fully Protected

#### 6.2.2.1 FESA/CESA-LISTED WILDLIFE

##### 6.2.2.1.1 California Tiger Salamander (*Ambystoma californiense*)

CTS (Sonoma Distinct Population Segment [DPS]), a federally endangered and state threatened species, is restricted to grasslands and low-elevation foothill regions in California where it uses seasonal aquatic habitats for breeding and spends the summer months in burrows located in adjacent upland areas. CTS breeds in natural ephemeral pools, or ponds that mimic ephemeral pools, and occupies areas surrounding the breeding pool as adults. CTS spend most of their time in the grasslands surrounding breeding pools. This species survives the hot, dry summer months by "estivating" or going through a dormant period in underground refugia, including small mammal burrows, deep soil cracks, or holes in the ground where the soil atmosphere remains near the water saturation point. During the wet winter months, CTS may emerge from refugia and feed in the surrounding grasslands or disperse to breeding locations (CDFW 2023c). Adult CTS are known to travel up to 1.3 miles from breeding sites (Sweet 1998). Therefore, areas with suitable habitat within 1.3 miles of known CTS breeding sites are likely considered to be CTS habitat unless there are significant barriers to movement (USFWS 2005).

CTS has potential to occur within grassland habitats within the BSA within the proximity of known or potential breeding sites, especially following winter storm events where this species may emerge from refugia and disperse. SWCA biologists determined that this species has potential to occur along Bloomfield, Casa Grande Road, King Road, Lichau Road, and Petaluma Hill Road due to the presence of suitable habitat as well as recent CNDDB occurrences (CDFW 2023a). However, no suitable burrows were observed within the project areas at these locations during the reconnaissance-level surveys; therefore, CTS may disperse through the project areas during storm events but are unlikely to be encountered within the project areas due to limited burrow presence.

The closest records to the project for each road segment are as follows:

- There is one non-specific record of this species from 1856 that is located within the Casa Grande Road project area.
- There are four records of this species within 2 miles of the King Road project area. The nearest record is from 1856 and is located within the project area. The most recent record is from 2022 and is located 1.8 miles northwest of the project area. CTS was observed along a roadside during winter surveys.
- There are two records of this species within 2 miles of the Lichau Road project area. The nearest and most recent record is from 1972 and is located 1.5 miles southwest of the project area. CTS was observed along a roadside.
- There is one record of this species from 2019 that is located 1.66 miles northwest of Petaluma Hill Road. CTS was observed during pitfall trapping at a seasonal wetland conservation bank with several acres of created vernal pool habitat.

##### 6.2.2.1.2 California Red-Legged Frog *(Rana draytonii*)

California red-legged frog (CRLF) (*Rana draytonii*), a federally threatened species and state SSC, occurs in various habitats during its life cycle. Breeding areas include aquatic habitats such as lagoons, streams, and natural and human-made ponds. The species prefers aquatic habitats with little or no flow, the presence of surface water to at least early June, surface water depths to at least 2.3 feet, and the presence of emergent vegetation (e.g., cattails and bulrush). The largest densities of CRLF are typically associated with dense stands of overhanging willows and an intermixed fringe of sturdy emergent vegetation (e.g., cattails, bulrush). During periods of wet weather, some individuals may make overland dispersals through adjacent upland habitats of distances up to 1 mile (USFWS 2002). Upland habitats including small

mammal burrows and woody debris can also be used as refuge during the summer if water is scarce or unavailable (Jennings and Hayes 1994). CRLF typically travels between sites and is unaffected by topography and vegetation types during migration. Dispersal habitat makes it possible for CRLF to locate new breeding and non-breeding sites, and is crucial for conservation of the species

CRLF has potential to occur in riparian areas within the BSA where suitable stream habitat is present. It may also occur upland habitats within the BSA especially areas with suitable cover and within the proximity of suitable breeding ponds. SWCA biologists determined that this species has potential to occur along Bloomfield Road, Fort Ross Road, Casa Grande Road, King Road, Lichau Road, and Sonoma Mountain Road due to the presence of suitable habitat as well as recent CNDDB occurrences (CDFW 2023a).

The closest records to the project area for each road segment are as follows:

- There is one non-specific record of this species from 2004 that is located within the Bloomfield Road project area. CRLF was observed within creek banks lined by forbs and grasses, adjacent to grazed pasture.
- There is one record of this species from 1994 that is located 1.73 miles southwest of the Casa Grande Road project area. CRLF was observed in a small stream, flowing into Petaluma Marsh with some saltwater intrusion.
- There are seven records of this species within 2 miles of the King Road project area. The nearest and most recent record is from 2016 and is located 0.88 mile southeast of the project area. CRLF was observed within a small ephemeral creek with dense and patchy willow riparian vegetation.
- There is one record of this species from 2016 that is located 1.25 miles east of the Lichau Road project area. CRLF was observed in a large pond filling in with sediment and tules in pastureland.
- There are eight records of this species within 2 miles of the Sonoma Mountain Road project area. The nearest record is from 2013 and is located 0.4 mile east of the project area. The most recent record is from 2013 and is located 1.66 miles southeast of the project area. CRLF was observed near the head of Copeland Creek on Sonoma Mountain.

#### 6.2.2.1.3 Coho Salmon (*Oncorhynchus kisutch*) (Central California Coast ESU)

Coho salmon (*Oncorhynchus kisutch*) (Central California Coast Evolutionary Significant Unit [ESU]), a federally and state endangered species, was historically widely distributed and abundant in many coastal watersheds of central and northern California, ranging from the Smith River near the Oregon border to the San Lorenzo River, Santa Cruz County, on the central California coast. The Central California Coast ESU refers to the coho salmon population that occurs between Punta Gorda and San Lorenzo River. However, over recent years, the distribution and abundance of coho salmon populations in California have declined considerably. Coho salmon typically inhabits small coastal streams, as well as larger rivers. Within northern California coastal drainages, coho salmon seem to be associated with low-gradient reaches of tributary streams, which provide suitable spawning areas and good juvenile rearing habitat. Suitable stream habitat contains adequate cover, cool water, and sufficient dissolved oxygen (Moyle 2002).

Based on findings from the literature review and field survey, there is potential for coho salmon to occur within the footprint of the Fort Ross Road project area. Fort Ross Road crosses a tributary to the South Fork Gualala River Project. There is critical habitat for coho salmon within the South Fork Gualala River and its tributaries as well as North Fork Lancel Creek, which crosses Morelli Lane (NOAA 2023); however, North Fork Lancel Creek was dry during the October 2023 field survey. There are two records of this species within 2 miles of near Morelli Lane. The nearest and most recent record is from 2015 and

is located 0.84 mile northwest of Morelli Lane. The record was found within Dutch Bill Creek (downstream of North Fork Lancel Creek), although exact location is unknown (CDFW 2023a).

#### 6.2.2.1.4 Steelhead (*Oncorhynchus mykiss irideus*) (Central California Coast DPS)

Steelhead (Central California Coast Distinct Population Segment [DPS]), a federally threatened species and state SSC, is an anadromous fish that occurs along the entire California coast and inland to the Sacramento–San Joaquin River system. Steelhead spend a portion of their life cycle in the Pacific Ocean before returning upstream to spawn. Steelhead requires beds of loose, silt-free, coarse gravel for spawning. Suitable stream habitat contains adequate cover, cool water and sufficient dissolved oxygen. However, upstream migration is often limited due to upstream barriers such as waterfalls, and cataracts as well as man-made dams and diversions. Steelhead feed on aquatic and terrestrial insects, frogs, and small fish (Moyle 2002).

Steelhead were observed by SWCA biologists within the portion of Calabazas Creek which occurs within the BSA adjacent to the Nuns Canyon Road segment. However, Calabazas Creek does not lie within the project footprint along this road segment. There is one record of this species from 2010 located within the Fort Ross Road project area. This record was found within the Gualala River and its tributaries between Jenner and Point Arena (CDFW 2023a). There is critical habitat for steelhead within North Fork Lancel Creek, South Fork Gualala River, Petaluma River, Adobe Creek and Calabazas Creek (NMFS 2023). However, Adobe Creek and North Fork Lancel Creek were dry during the October 2023 field survey.

#### 6.2.2.1.5 Northern Spotted Owl (*Strix occidentalis caurina*)

Northern spotted owl (NSO) (*Strix occidentalis caurina*), a federally threatened species, is known to occur in late seral forests in Washington, Oregon, and California. NSO inhabits old-growth forests with dense closed canopies that are characterized by multiple layers of different tree species and open space among lower branches to allow flight below the canopy line. This species prefers forests with a combination of standing snags, broken topped trees, and numerous fallen logs. It nests between February and June, in the tops of trees or in tree cavities (USFWS 2020b).

NSO has potential to occur within late seral, high canopy cover, Douglas-fir, redwood, and montane hardwood-conifer forest habitats present within the BSA. Such habitat is limited to Fort Ross Road, the far western portion of Morelli Lane, and the northern portion of Nuns Canyon Road. Although road segments, such as along Sonoma Mountain Road, were observed to contain adjacent forested habitat, these areas are not suitable for NSO due to either habitat fragmentation, early successional forest stands, and/or unsuitable canopy cover to support nesting and roosting. No nesting or roosting pairs have been documented within 0.5 mile of the project (CDFW 2023a). There are records of this species within 2 miles of each of these road segments (CDFW 2023a) and eBird observations (Cornell Lab of Ornithology 2023).

The closest records to the project for each road segment are as follows:

- The nearest positive record of this species to the Fort Ross Road project area was observed in 1992 and is located 1.60 miles southwest (OBSID 99085).
- The nearest positive record of this species to the Morelli Lane project area was observed in 2016 and is located 0.06 mile south (OBSID 161963).
- The nearest positive record of this species to the Nuns Canyon Road project was observed in 1990 and is located 1.6 miles southeast (OBSID 98215).

#### 6.2.2.1.6 Tricolored Blackbird (*Agelaius tricolor*)

Tricolored blackbird (*Agelaius tricolor*), a state threatened species and SSC, is a year-round resident of California and is common locally throughout Central Valley and in coastal districts from Sonoma County south. Tricolored blackbird is a highly colonial species that breeds near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, and tall herbs. Feeds in grassland and cropland habitats. This species breeds locally in northeastern California and becomes more widespread along central coast and San Francisco Bay area in winter (Grinnell and Miller 1944; McCaskie et al. 1979; Garrett and Dunn 1981).

Tricolored blackbird has potential to nest in riparian areas within the BSA where dense shrub thickets are present, especially in riparian areas that border wetlands or where suitable foraging habitat is present, including non-native grasslands or agricultural habitats in the BSA. SWCA biologists determined that this species has potential to occur along the Bloomfield Road, Casa Grande Road, King Road, Lichau Road, and Petaluma Hill Road due to the presence of suitable habitat as well as recent CNDDB occurrences (CDFW 2023a) and eBird observations (Cornell Lab of Ornithology 2023). There is one record of this species from 2015 that is located 0.93 mile northwest of the Lichau Road project area and 0.18 mile southwest of the Petaluma Hill Road project area. Tricolored blackbird was observed nesting within blackberry, willows, and thistles along the bank of Copeland Creek (CDFW 2023a). There are numerous recent occurrences of this species throughout Sonoma County (Cornell Lab of Ornithology 2023).

### 6.2.2.2 OTHER SPECIAL-STATUS WILDLIFE

#### 6.2.2.2.1 Sonoma Tree Vole (*Arborimus pomo*)

Sonoma tree vole (*Arborimus pomo*), a state SSC, is distributed along the North Coast from Sonoma County north to the Oregon border, being more or less restricted to the fog belt. This species is reported to be rare to uncommon throughout its range, but the difficulty of locating nests and capturing individuals makes abundance hard to assess. Occurs in old-growth and other forests, mainly Douglas fir, redwood, and montane hardwood-conifer habitats. Sonoma tree vole constructs nests of Douglas fir needles in tall trees. The nests of this species may be situated on whorl of limbs against a trunk, at outer limits of branches, or at broken tops of trees (CDFW 2023c).

Sonoma tree vole has potential to occur within Douglas fir, redwood, and montane hardwood-conifer forest habitats present within the BSA. Such habitats can be found along Fort Ross Road, Morelli Lane, Sonoma Mountain. Road, and Nuns Canyon Road. There is one record of this species from 1995 that is located within the Morelli Lane project area (CDFW 2023a).

#### 6.2.2.2.2 California Giant Salamander (*Dicamptodon ensatus*)

California giant salamander (*Dicamptodon ensatus*), a state SSC, is a year-round resident of north-central California, from southern Santa Cruz County to extreme southern Mendocino and Lake Counties. This species occurs up to 2,160 meters (6,500 feet), primarily in humid coastal forests, especially in Douglas fir, redwood, red fir, and montane and valley-foothill riparian habitats (Stebbins 1972). California giant salamander lives in or near streams in damp forests and tends to be common where it occurs (Stebbins 1985). Aquatic adults and larvae are found in cool, rocky streams and occasionally in lakes and ponds (Nussbaum and Clothier 1973).

California giant salamander has the potential to occur in riparian areas within the project areas of Fort Ross Road, Morelli Lane, Nuns Canyon Road, and Sonoma Mountain Road due to the presence of suitable habitat as well as recent CNDDB occurrences (CDFW 2023a).

The closest records to the project for each road segment are as follows:

- There are seven records of this species within 2 miles of the Fort Ross Road project area. The nearest record is from 1913 and is located within the project area. The most recent record is from 2016 and is located 1.34 miles southeast of the project area. California giant salamander was observed along fire road in grassland with coyote bush, on a north-facing slope in a forested area.
- There is one record of this species from 2013 that is located 1.12 miles northwest of Morelli Lane. California giant salamander was observed at the confluence of Grab and Butch Bill Creeks.
- There is one record of this species from 2014 that is located 1.36 miles northeast of Nuns Canyon Road project area within Stuart Creek.
- There is one record of this species from 2016 that is located 1.75 miles southeast of Sonoma Mountain Road. California giant salamander was observed under logs in mature oak woodland.

#### 6.2.2.2.3 Foothill Yellow-Legged Frog (*Rana boylii*) (North Coast DPS)

Foothill yellow-legged frog (*Rana boylii*) (North Coast DPS), a state SSC, occurs in the Coast Ranges from the Oregon border south to the Transverse Mountains in Los Angeles County, in most of northern California west of the Cascade crest, and along the western flank of the Sierra south to Kern County. The elevation range of this species extends from near sea level to 1940 meters (6370 feet) in the Sierra (Jennings and Hayes 1994). FYLF is often found in or near rocky streams in a variety of habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow types (CDFW 2023c).

SWCA biologists determined that FYLF has potential to occur along all road segments except for Bloomfield Road, Santa Rosa Avenue, Corona Avenue, and Woodward Avenue (see Table 8) due to the presence of suitable habitat as well as recent CNDDB occurrences (CDFW 2023a).

The closest records to the project for each road segment are as follows:

- There are three records of this species within 2 miles of the Casa Grande Road project area. The nearest record is from 1998 and is located within the project area. The most recent record is from 2019 and is located 0.87 mile southwest of the project area within a channelized creek with restored riparian vegetation.
- There are four records of this species within 2 miles of the Fort Ross Road project area. The nearest record is from 1913 and is located within the project area. The most recent record is from 2018 and is located 0.9 mile northeast of the project area near the confluence of Ward Creek and Big Oak Creek.
- There is one record of this species from 1987 that is located 1.6 miles east of the King Road project area in the vicinity of Lichau Creek.
- There are six records of this species within 2 miles of the Lichau Road project area. The nearest record is from 2002 and is within the project area. The most recent record is from 2013 and is located 1.8 miles northeast of the project area along Copeland Creek in Fairfield Osborn Preserve, west of Rohnert Park.
- There are two records of this species within 2 miles of the Morelli Lane project area. The nearest record is from 1967 and is located within the project area. The most recent record is from 2018 and is located 1.2 miles northeast of the project area within Green Valley Creek.
- There are four records of this species within 2 miles of the Petaluma Hill Road project area. The nearest record is from 2002 and is located 0.2 mile south of the project area. The most recent

record is from 2017 and is located 0.95 mile southwest of the project area. This record is located within a channelized urban creek that is a sedimentation detention basin that fills annually with gravel from winter flooding.

- There are two records of this species within 2 miles of the Nuns Canyon Road project area. The nearest record is from 2002 and is located 0.5 mile east of the project area. The most recent record is from 2014 and is located 1.38 miles southeast of the project area within Stuart Creek.
- There is one record of this species from 2013 that is located 1.84 miles east of Sonoma Mountain Road. FYLF was observed at a road crossing along Copeland Creek.

#### 6.2.2.2.4 Red-Bellied Newt (*Taricha rivularis*)

Red-bellied newt (*Taricha rivularis*), a state SSC, occurs within Sonoma, Mendocino, Humboldt, and Lake Counties. This species is abundant throughout most of its range and inhabits primarily redwood forest, but is also found within mixed conifer, valley-foothill woodland, montane hardwood, and hardwood-conifer habitats (CDFW 2023c). As an adult, red-bellied newt is terrestrial, but the species migrates to streams during fall and winter rains for aquatic breeding and spends the dry summer months under woody debris and inside animal burrows (California Herps 2023).

Red-bellied newt has the potential to occur in riparian areas within the project areas of Casa Grande Road, Fort Ross Road, Nuns Canyon Road, and Sonoma Mountain Road due to the presence of suitable habitat as well as recent CNDDB occurrences (CDFW 2023a).

The closest records to the project for each road segment are as follows:

- There is one record (exact location unknown) of this species from an unknown date that is located 1.67 miles southwest of the Casa Grande Road project area.
- There is one record (exact location unknown) of this species from 1957 that is located within the Fort Ross Road project area.
- There is one record (exact location unknown) of this species from 1977 that is located 0.66 miles southeast of Nuns Canyon Road.

#### 6.2.2.2.5 Saltmarsh Common Yellowthroat (*Geothlypis trichas sinuosa*)

Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*), a state SSC, inhabits freshwater marsh habitat with adjacent riparian thickets, and is known to breed in southern Sonoma County. In early spring, this species builds open-cup nests typically low to the ground in grasses, herbaceous vegetation, cattails, tules, and some shrubs (e.g., coyote brush). Surrounding marshes, coastal swales, riparian thickets, and edges of disturbed weed fields that border soggy habitats are used for refuge and foraging for the species (Shuford and Gardali 2008).

Saltmarsh common yellowthroat has potential to nest in riparian areas within the BSA where dense shrub thickets are present, especially in riparian areas that border wetlands or where suitable foraging habitat is present, including non-native grasslands or agricultural habitats in the BSA. SWCA biologists determined that this species has potential to occur along Casa Grande Road due to the presence of suitable riparian habitat as well as recent CNDDB occurrences (CDFW 2023a) and eBird observations (Cornell Lab of Ornithology 2023). This species has been historically documented nesting in the Petaluma Marsh, located approximately 1.5 miles to the southwest of the project area at Casa Grande Road (Shuford and Gardali 2008). Additionally, there is one record of this species from 1985 located 1.36 miles southwest of Casa Grande Road project area located within a coastal brackish marsh (CDFW 2023a).

#### 6.2.2.2.6 White-Tailed Kite (*Elanus leucurus*)

White-tailed kite (*Elanus leucurus*), a CDFW FP species, is a yearlong resident in coastal and valley lowlands that inhabits herbaceous and open stages of most habitats mostly in cismontane California. this species forages in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands on small mammals, birds, lizards, or insects. Individual nests are placed near the top of dense tree stands, usually 20 to 100 feet aboveground and near foraging habitat (CDFW 2023c).

White-tailed kite has potential to nest in riparian and oak woodland habitats within the BSA, especially in areas adjacent to suitable foraging habitat such as grasslands, agricultural land, and wetlands. SWCA biologists determined that this species has potential to occur along all road segments except for Fort Ross Road, Santa Rosa Avenue, Corona Avenue, and Woodward Avenue (see Table 8) due to the presence of suitable habitat as well as recent CNDDB occurrences (CDFW 2023a) and eBird observations (Cornell Lab of Ornithology 2023). There is one record of white-tailed kite from 2003 located 0.87 mile northwest of the Santa Rosa Avenue project area (CDFW 2023a). Additionally, there are numerous recent occurrences of this species throughout Sonoma County (Cornell Lab of Ornithology 2023).

#### 6.2.2.2.7 Roosting Bats

Roosting bat habitat preference varies by species, but in general, bats roost in a variety of natural and human-made structures. Some species prefer to roost in tree cavities, among leaves and under bark. Trees such as oak, beech and ash are particularly suitable for bats. Other bat species prefer to roost in caves and rock crevices. Many bat species will also readily occupy man-made structures such as houses, barns, bridges or culverts (Western Bat Working Group [WBWG] 2023). Several project locations contain suitable roosting for many bat species in the form of large oak trees, as well as human-made structures including houses, barns, bridges, and culverts.

There are recent CNDDB occurrences of special-status bat species, including Townsend's big-eared bat (*Corynorhinus townsendii*) and western red bat (*Lasiurus frantzii*), within the vicinity of several project locations, including Bloomfield Road, Casa Grande Road, and Corona Road (CDFW 2023a); however, there is no suitable habitat for roosting bats present along any of the road segments that would be impacted by project activities. Additionally, no bat roosts or bat roosting evidence (urine staining or guano) was observed during the reconnaissance-level bat survey for the project.

#### 6.2.2.2.8 Nesting Migratory Birds/Raptors

The BSA contains suitable nesting and foraging habitat for avian species protected under the MBTA and California Fish and Game Code Sections 3503 and 3513 during the typical nesting season (February 15–September 15). Suitable nesting and foraging habitats would include the grassland areas, shrubs, and trees within and adjacent to nearly all project areas. Nesting is unlikely outside of the typical nesting season, although some avian species may forage year-round near the project site. Avian species protected by the MBTA and California Fish and Game Code observed in the BSA during the October 2023 field survey are included in Appendix E. No nesting birds were observed during the field survey, which occurred just prior to the start of the typical nesting season.

## 6.3 Critical Habitat

The southern half of the Santa Rosa Avenue project area (south of Bellevue Avenue) occurs within critical habitat for CTS. The northern end of the King Avenue project area lies adjacent to this same critical habitat block. Additionally, the Woodward Avenue project area is located within approximately 180 feet of this critical habitat block (USFWS 2023a).

There is critical habitat for coho salmon and steelhead within North Fork Lancel Creek (crosses Morelli Lane) and the South Fork Gualala River and its tributaries (adjacent to Fort Ross Road). Additionally, there is critical habitat for steelhead within the Petaluma River (crosses Corona Road), Adobe Creek (crosses Casa Grande Road), and Calabazas Creek (adjacent to Nuns Canyon Road) (NOAA 2023); however, Adobe Creek was dry during the October 2023 field survey.

Figure G-1 (see Appendix G) shows all designated critical habitat present within the vicinity of the BSA. No other project locations occur within critical habitat for any other species.

## 6.4 Essential Fish Habitat

The Pacific Fishery Management Council (PFMC) has delineated Essential Fish Habitat (EFH) for the Pacific Salmon Fishery Management Plan (FMP). As shown in Figure G-1 (see Appendix G), the FMP identifies coho salmon and Chinook salmon (*Oncorhynchus tshawytscha*) freshwater EFH within nearly every major watershed in Sonoma County (NOAA 2023). As defined in the FMP, the coho salmon freshwater EFH includes all waterbodies currently or historically occupied by PFMC-managed coho or Chinook salmon in Washington, Oregon, Idaho, and California. Relevant habitat parameters for coho salmon freshwater EFH include: (1) spawning and incubation, (2) juvenile rearing, (3) juvenile migration corridors, and (4) adult migration corridors.

South Fork Gualala River contains suitable freshwater spawning/incubation, and rearing habitat for coho and Chinook salmon. Additionally, there are recent CNDDB occurrences of coho salmon in Dutch Bill Creek (near Morelli Lane). However, Dutch Bill Creek lies outside the Morelli Lane project area and therefore is unlikely to be impacted by the project. There are no recent CNDDB occurrences of Chinook salmon within any waterbody within any of the project areas (CDFW 2023a).

There is no marine habitat within any of the project locations that could support coho or Chinook salmon.

## 6.5 Jurisdictional Wetlands/Waters

Approximately 14.92 acres (650,106.22 square feet) of potentially jurisdictional wetlands and other waters were delineated and mapped in the BSA, as depicted in Appendix E of the PJD. These features include perennial and intermittent channels, ephemeral channels and ditches, seasonal wetlands, and riparian vegetation; photographs of potentially jurisdictional features are included in the PJD. The wetland determination data forms and OHWM data forms used in the delineations are provided in Appendix G of the PJD. A summary of all delineated features present within the BSA is also provided in Appendix H of the PJD (SWCA 2024).

In accordance with the 2023 waters of the United States final rule amendment, which updated the definition of waters of the United States, perennial and intermittent channels would likely be considered Relatively Permanent Waters (RPWs) and would be considered USACE jurisdictional where they maintain consistent or continuous surface water connections to downstream jurisdictional waters. Perennial and intermittent channels within the survey area are likely considered jurisdictional under the USACE, RWQCB/SWRCB, and CDFW. None of the ephemeral channels, ditches, or seasonal wetland habitat mapped in the survey area are likely to be considered jurisdictional under the USACE due to the limited and temporary duration of flows within these features. Ephemeral channels, ditches, seasonal wetlands, and riparian vegetation within the survey area are likely considered jurisdictional under the RWQCB/SWRCB and CDFW. All discussions on riparian vegetation have been incorporated into the discussion of waters below.

Roadways that did not contain jurisdictional features are not discussed further in this report. Human-made ephemeral ditches lacking an OHWM or suitable vegetation to support fish and wildlife species are also not analyzed in this report, as these features were considered non-jurisdictional and were therefore not delineated. In addition, there are multiple perennial channels that cross beneath project roadways through culverts or bridges that were not delineated as they did not occur directly within the survey area and will not be impacted by project activities.

### 6.5.1 Seasonal Wetlands

Two seasonal wetlands occur within the survey area—one at Bloomfield Road and one at Sonoma Mountain Road—and were observed within human-made ephemeral roadside ditches that collect runoff during storm events. The seasonal wetlands were recorded at one distinct location in isolated patches within a section of each roadside ditch. Both locations collect pooling water, causing inundation within the ditch for long enough periods to establish hydrophytic vegetation. Where seasonal wetlands were observed, the roadside ditches had defined OHWMs that disappeared for the remaining length of the ditch.

One seasonal wetland occurs at the southern extent of Bloomfield Road within a roadside ditch. Dominant vegetation within the seasonal wetland includes arroyo willow, curly dock (*Rumex crispus*), cheese weed (*Malva parviflora*), and Himalayan blackberry (*Rubus armeniacus*). All three parameters were met at this location, with dominant hydrophytic vegetation, hydric soil indicators, and hydrological evidence of water staining. One seasonal wetland occurs at the northeastern extent of Sonoma Mountain Road within a roadside ditch. Dominant vegetation within the seasonal wetland includes Himalayan blackberry, common rush, and sweet vernal grass. All three parameters were met at this location. The presence of a highwater table, hydrogen sulfide smell, and saturation were observed indicators within the Sonoma Mountain Road seasonal wetland. These features are represented in the figures in Appendix E of the PJD and representative photos of both seasonal wetlands are provided in Appendix F of the PJD (SWCA 2024).

### 6.5.2 Perennial Channel/Waters

Three perennial channels occur adjacent to or cross beneath project roadways within the BSA. However, perennial waters that will not be impacted by project activities and did not fall directly within the survey area were not delineated. In general, where creek or river crossings occurred within the survey area, perennial channels were typically channelized, concrete lined, or conveyed through culverts beneath and away from roadways.

Named perennial channels within or adjacent to the BSA include the South Fork Gualala River (adjacent to Fort Ross Road), Petaluma River (intersects Corona Road), and Calabazas Creek (adjacent to Nuns Canyon Road). These features are represented in the figures in Appendix E of the PJD and representative photos of these features are provided in Appendix F of the PJD (SWCA 2024).

### 6.5.3 Intermittent Channel/Waters

Twelve intermittent channels were delineated in the survey area at the following road locations: Casa Grande Road, Fort Ross Road, King Road, Morelli Lane, Petaluma Hill Road, Santa Rosa Avenue, and Sonoma Mountain Road. Within the BSA, intermittent channels were generally tributaries of perennial features that occurred alongside and/or perpendicular to project roadways. As a result, there was a combination of natural and relatively undisturbed streams and channelized or engineered streams within the survey area. Where intermittent channels crossed project roadways, they were typically conveyed through culverts or beneath small bridges. Riparian vegetation varied from contiguous and dense

coverage at less urban sites to sparsely vegetated in urban and residential areas. Dominant species within the riparian canopy included big leaf maple, white alder, and arroyo willow at the majority of inland roadways and transitioned to redwood and Fremont cottonwood closer to the coast. Substrate varied from cobble and gravel to silty soils. Isolated pooling was observed, but the majority of intermittent channels encountered were dry at the time of the delineation.

Named intermittent channels within or adjacent to the BSA include Adobe Creek (intersects Casa Grande Road), Matanzas Creek (intersects Sonoma Mountain Road), Hunter Creek (intersects Santa Rosa Avenue), and North Fork Lancel Creek (intersects Morelli Lane). Petaluma Hill Road is intersected by Crane and Hinebaugh Creeks. These features are represented in the figures in Appendix E of the PJD and representative photos of these features are provided in Appendix F of the PJD (SWCA 2024).

### *6.5.4 Ephemeral Channels and Ditches*

One ephemeral channel and four ephemeral ditches were delineated in the survey area at the following road locations: Bloomfield Road, King Road, Morelli Lane, and Sonoma Mountain Road. Ephemeral ditches are extremely common adjacent to roadways as a means to collect runoff and direct flows away from residential and urban areas. Ephemeral ditches were primarily located in residential, urban, and agricultural areas. These features consist of excavated soil ditches dominated by ruderal or landscaped vegetation, including non-native annual grassland, prickly oxtongue (*Helminthotheca echioides*), and common plantain (*Plantago major*). Most of the ditches that were adjacent to residential communities appeared to be regularly disked or mowed. Within the survey area, there were numerous non-jurisdictional ditches observed. Non-jurisdictional ditches were characteristic human-made V-ditches with no defined OHWM and were either unvegetated or vegetated by ruderal weeds. These features are represented in the figures in Appendix E of the PJD and representative photos of these features are provided in Appendix F of the PJD (SWCA 2024).

# 7 IMPACTS ANALYSIS

## 7.1 Sensitive Natural Communities

Sensitive natural communities that occur in the BSA include Redwood Forest and Woodland, California Bay Forest and Woodland, Douglas Fir Forest and Woodland, Madrone Forest, Tanoak Forest, White Alder Groves, Freemont Cottonwood Forest and Woodland, and Arroyo Willow Thickets. These sensitive communities can be found along Fort Ross Road, Lichau Road, Morelli Lane, Nuns Canyon Road, and Sonoma Mountain Road. Project activities are unlikely to significantly impact any sensitive natural communities as the majority of proposed activities would be limited to existing roadways and vegetation removal is not anticipated. However, minor impacts to Riparian (Other) habitat may occur along Fort Ross Road, King Road, Morelli Lane, and Sonoma Mountain Road due to culvert replacements and/or ditch excavations proposed along these road segments. However, potential impacts to riparian habitat within the BSA are expected to be minimal (< 0.1 acre per road segment) and limited to areas immediately adjacent to the proposed culvert replacements, ditch excavations, and guardrail installations (see Section 7.2, *Species*).

# 7.2 Species

## 7.2.1 Potential Impacts to Special-Status Plants

The following 14 special-status plants have potential to occur in the project areas based on habitat suitability, proximity of recent occurrences, and species' geographic ranges: angel's hair lichen, Colusa layia, congested-headed hayfield tarplant, Crystal Springs lessingia, fragrant fritillary, Franciscan onion, Greene's narrow-leaved daisy, holly-leaved ceanothus, Jepson's leptosiphon, Napa false indigo, narrow-anthered brodiaea, Sonoma Alopecurus, Sonoma ceanothus, and two-fork clover. Table 7, above, provides a summary of the presence of potentially suitable habitat for these species by road segment.

Project activities, particularly activities along road shoulders such as ditch maintenance, guardrail installation, and culvert replacement, have the potential to impact special-status plants and could result in in the destruction of special-status plants if present along road shoulders. Furthermore, the spread of invasive weeds as a result of project activities could result in negative impacts to special-status plant species if they are present due to competition with invasives. As stated previously, reconnaissance-level surveys were not conducted in the appropriate blooming period for these species, and therefore, seasonally timed botanical surveys are recommended within areas of suitable habitat prior to construction. If special-status plant species are observed within the project area during these surveys, individuals will be flagged and avoided by construction as described in Avoidance and Minimization Measure (AMM)-2a (see Section 8.2.1, *Special-Status Plants*). In order to prevent negatively impacting special-status plant species, measures will be taken by the construction contractor to minimize the spread of seeds and debris as described in AMM-2b.

Project impacts to special-status plant species are anticipated to be less than significant with implementation of project AMMs.

## 7.2.1 Potential Impacts to Special-Status Wildlife

The following 11 special-status wildlife species were determined to have potential to occur in the project areas based on habitat suitability, proximity of recent occurrences, and species' geographic ranges: Sonoma tree vole, California giant salamander, California red-legged frog, California tiger salamander (Sonoma County DPS), foothill yellow-legged frog (North Coast DPS), red-bellied newt, coho salmon (Central California Coast ESU), steelhead (Central California Coast DPS), northern spotted owl, saltmarsh common yellowthroat, tricolored blackbird, and white-tailed kite. Table 8, above, illustrates the potential for each species to occur by road segment.

### 7.2.1.1 CALIFORNIA TIGER SALAMANDER

CTS has potential to occur within the BSA where grassland habitats within the proximity of known or potential breeding sites are present. SWCA biologists determined that this species has potential to occur along Bloomfield Road, Casa Grande Road, King Road, Lichau Road, and Petaluma Hill Road (see Table 8). The project would include temporary disturbance to potential upland and dispersal habitat for CTS. The project would not impact aquatic breeding habitat for this species.

CTS is most likely to occur within the project areas during or following seasonal dispersal events (especially at night and/or during rain events from late fall to late spring). Potential direct impacts could occur if CTS individuals were to enter active project areas or staging areas during project activities and be killed or injured by project equipment or worker foot-traffic. Direct impacts to CTS potentially occurring within burrows located in upland habitat are not anticipated given the proposed scope of project activities in suitable upland habitat (i.e., ground disturbance associated with sediment clearing within ditch

channels where CTS estivation is not anticipated to occur). Furthermore, no suitable burrows were observed within project areas during the reconnaissance-level surveys and any burrows that are encountered during construction will be flagged for avoidance per AMM-3a to avoid impacts to CTS individuals that may be inside these burrows (see Section 8.2.2, *Special-Status Amphibians*). AMM-3a through AMM-3e include measures such as preconstruction surveys, biological monitoring, and dry and daylight work restrictions to avoid potential direct impacts to CTS.

Potential indirect impacts to CTS could include temporary alteration of migration behavior because of project activities. Project activities, limited to maintenance of existing infrastructure, would not result in the creation any new permanent barriers that would prevent dispersal of CTS between stock ponds and wetlands (i.e., suitable breeding sites) within the vicinity of the project areas. The project is therefore not likely to result in substantial interference with CTS dispersal because none of the project areas lie within any direct line between suitable aquatic breeding habitat as well as the availability of more suitable upland and dispersal habitat within the vicinity of the project areas. Studies have shown that lighting can also cause indirect impacts to CTS. Therefore, AMM-3f requires lighting systems to be designed to direct the lighting to the roadway with minimal illumination of the surrounding area (Longcore and Rich 2004).

Project impacts to CTS are anticipated to be less than significant with implementation of project AMMs.

#### 7.2.1.2 CALIFORNIA RED-LEGGED FROG

CRLF has potential to occur in riparian areas within the BSA where suitable stream habitat is present. This species may also occur in upland habitats within the BSA, especially areas with suitable cover and within the proximity of suitable breeding ponds. SWCA biologists determined that this species has potential to occur along Bloomfield Road, Fort Ross Road, Casa Grande Road, King Road, Lichau Road, and Sonoma Mountain Road.

Like CTS, CRLF is most likely to occur within the project areas during or following seasonal dispersal events. Potential direct impacts could occur if CRLF individuals were to enter active project areas or staging areas during project activities and be killed or injured by project equipment or worker foot-traffic. AMM-3a through AMM-3e include measures such as preconstruction surveys, biological monitoring, and dry and daylight work restrictions to avoid potential direct impacts to CRLF (see Section 8.2.2, *Special-Status Amphibians*).

Potential indirect impacts to CRLF could include temporary alteration of migration behavior because of project activities. Project activities, limited to maintenance of existing infrastructure, would not result in the creation any new permanent barriers that would prevent dispersal of CRLF between stock ponds and wetlands (i.e., suitable breeding sites) within the vicinity of the project areas. The project is therefore not likely to result in substantial interference with CRLF dispersal because the none of the project areas lie within any direct line between suitable aquatic breeding habitat as well as the availability of more suitable upland and dispersal habitat within the vicinity of the project areas. Indirect effects to CRLF also include potential increased erosion and sedimentation or release of hazardous substances, associated with equipment spills, within aquatic habitat. AMM-1c and AMM-1d are designed to avoid and minimize potential impacts to aquatic habitat associated with erosion, sedimentation, and release of hazardous substances (see Section 8.1, *General Measures*).

Project impacts to CRLF are anticipated to be less than significant with implementation of project AMMs.

#### 7.2.1.3 ANADROMOUS FISH (COHO SALMON AND STEELHEAD)

There is potential for coho salmon and steelhead to occur within the footprint of the Fort Ross Road project area. There is critical habitat for coho salmon within the South Fork Gualala River and its tributaries (NOAA 2023), and the South Fork Gualala River is also designated freshwater EFH for coho salmon (NOAA 2023). Steelhead have been documented within the South Fork Gualala River, downstream of the Fort Ross Road segment (CDFW 2023a). Although steelhead were observed within the portion of Calabazas Creek that occurs within the BSA adjacent to the Nuns Canyon Road, Calabazas Creek does not lie within the project footprint. There is also critical habitat for coho salmon and steelhead within North Fork Lancel Creek and for steelhead within South Fork Gualala River, Petaluma River, Adobe Creek, and Calabazas Creek (NOAA 2023). However, Adobe Creek and North Fork Lancel Creek were dry during the October 2023 field survey. Project activities are not expected to directly impact steelhead stream habitat along any of these project areas.

No direct impacts to anadromous fish are anticipated with implementation of AMM-4a, which requires avoidance of in water work in suitable anadromous fish habitat (see Section 8.2.3, *Anadromous Fish*). Culvert replacement activities along Fort Ross Road may temporarily impact anadromous fish habitat; however, impacts are anticipated to be temporary, stream conditions will be restored to preconstruction conditions/contours as described in AMM-1i, and AMM-1c and AMM-1d would be implemented to avoid and minimize potential impacts to aquatic habitat associated with erosion, sedimentation, and release of hazardous substances (see Section 8.1, *General Measures*).

Project impacts to anadromous fish are anticipated to be less than significant with implementation of project AMMs.

#### 7.2.1.4 NORTHERN SPOTTED OWL

NSO has potential to has occur within Douglas fir, redwood, and montane hardwood-conifer forest habitats present within the BSA. Such habitats can be found along Fort Ross Road, Morelli Lane, Sonoma Mountain. Road, and Nuns Canyon Road (see Table 8). Project activities in suitable habitat do not include removal of any trees that provide suitable nesting/roosting trees for NSO. Furthermore, all work will occur adjacent to regularly traveled roadways subject to regular visual and noise disturbance.

Noise associated with project repaving and other construction activities has potential to disturb NSO if the species is found to be nesting within suitable habitat adjacent to these project areas. Disturbance due to noise from construction equipment may result in nest abandonment if nesting NSO is present within the vicinity of any of the project areas during construction. Nest abandonment would constitute “take” as defined under the FESA. AMM-5a, which sets noise level limits during the NSO nesting season, is designed to avoid potential impacts to potential nesting NSO within 0.25 mile of project activities (see Section 8.2, *Northern Spotted Owl*).

Potential indirect effects to NSO include general human presence disturbance, such as increased presence of trash, which could attract predatory species to the project area. Because the proposed activities are located along existing roads, subject to regular anthropogenic disturbance, and with implementation of AMM-1f, site maintenance (see Section 8.1, *General Measures*), indirect impacts to NSO are not anticipated.

Project impacts to NSO are anticipated to be less than significant with implementation of project AMMs.

#### 7.2.1.5 SONOMA TREE VOLE

Sonoma tree vole has potential to has occur within Douglas fir, redwood, and montane hardwood-conifer forest habitats present within the vicinity of Fort Ross Road and Morelli Lane; however, project activities are unlikely to impact this species. Project activities do not propose the removal of any trees, including suitable nesting/foraging trees for Sonoma tree vole along either of these road segments. Therefore, the project in not anticipated to result in impacts to this species.

#### 7.2.1.6 AMPHIBIANS OF SPECIAL CONCERN (CALIFORNIA GIANT SALAMANDER, FOOTHILL YELLOW-LEGGED FROG, AND RED-BELLIED NEWT)

Project activities have the potential to adversely impact California giant salamander, FYLF, and red-bellied newt. These amphibian SSC have potential to occur in riparian areas within the BSA where suitable stream habitat is present. SWCA biologists determined that these species have potential to occur along the road segments (see Table 8.

Like CTS and CRLF, amphibian SSC are most likely to occur within the project areas during or following seasonal dispersal events. Potential direct impacts could occur if individuals were to enter active project areas or staging areas during project activities and be killed or injured by project equipment or worker foot-traffic. AMM-3a through AMM-3e include measures such as preconstruction surveys, biological monitoring, and dry and daylight work restrictions to avoid potential direct impacts to amphibian SSC (see Section 8.2.2, *Special-Status Amphibians*).

Potential indirect impacts to amphibian SSC could include temporary alteration of migration behavior because of project activities. Project activities, limited to maintenance of existing infrastructure, would not result in the creation of any new permanent barriers to migration. The project is therefore not likely to result in substantial interference with amphibian migration and dispersal. Indirect effects to amphibian SSC also include potential increased erosion and sedimentation or release of hazardous substances, associated with equipment spills, within aquatic habitat. AMM-1c and AMM-1d are designed to avoid and minimize potential impacts to aquatic habitat associated with erosion, sedimentation, and release of hazardous substances (see Section 8.1, *General Measures*).

Project impacts to California giant salamander, FYLF, and red-bellied newt are anticipated to be less than significant with implementation of project AMMs.

#### 7.2.1.7 ROOSTING BATS

There are recent CNDDB occurrences of special-status bat species, including Townsend's big-eared bat and western red bat, within the vicinity of several project areas (CDFW 2023a). However, there is no suitable habitat for roosting bats present along any of the road segments that would be impacted by project activities. Additionally, no bat roosts or bat roosting evidence (urine staining or guano) was observed during the reconnaissance-level bat survey for the project. Therefore, project activities are not expected to impact roosting bats.

#### 7.2.1.8 NESTING MIGRATORY BIRDS/RAPTORS

The BSA contains suitable nesting and foraging habitat for special-status bird species, including tricolored blackbird, saltmarsh common yellowthroat, and white-tailed kite as well as other avian species protected under the MBTA and California Fish and Game Code Sections 3503 and 3513 during the typical nesting season (February 15–September 15). Suitable nesting and forging habitats would include the grassland areas, shrubs, and trees within and adjacent to nearly all project areas. Nesting is unlikely

outside of the typical nesting season, although some avian species may forage year-round near the project site.

Tricolored blackbird and saltmarsh common yellowthroat have potential to nest in riparian areas within the BSA where dense shrub thickets are present, especially in areas that border wetlands or where suitable non-native grasslands or agricultural foraging habitat. White-tailed kite has potential to nest in riparian and oak woodland habitats within the BSA especially areas adjacent to suitable such as grasslands, agricultural land, or wetlands foraging habitat. SWCA biologists determined that these species have potential to occur along road segments (see Table 7).

Project activities do not propose the removal of any trees or riparian vegetation along any of the project areas. However, disturbance due to noise, dust, or vibration from construction equipment may result in nest abandonment if nesting birds are present within the vicinity of any of the project areas during construction. Nest abandonment would be considered a significant impact under CEQA and would constitute "take" as defined under the CESA in the case of tricolored blackbird. Therefore, preconstruction nesting surveys as described in AMM-6a will be implemented to minimize any impacts to nesting birds that may occur in the BSA (see Section 8.2.5, *Nesting Migratory Birds/Raptors*).

Project impacts to nesting birds are anticipated to be less than significant with implementation of project AMMs.

## 7.3 Wildlife Habitat and Movement Corridors

Riparian corridors and contiguous habitat observed throughout the project and adjacent habitats provide suitable wildlife and migration habitat for amphibians, reptiles, birds, and mammals.

However, the predominantly temporary disturbance and short duration of construction activities are unlikely to substantially disrupt the migration of animals through the above-described areas. Given the above, and with implementation of the avoidance and minimization measures in Section 8, *Recommendations/Avoidance and Minimization Measures*, the project is not expected to interfere substantially with the movement of any native resident or migratory wildlife.

## 7.4 Potential Impacts to Critical Habitat and Essential Fish Habitat

Figure G-1 (see Appendix G) shows all designated critical habitat present within the vicinity of the BSA. The southern half of the Santa Rosa Avenue project area (south of Bellevue Avenue) occurs within critical habitat for CTS (USFWS 2023a); however, project activities are unlikely to impact CTS or its critical habitat due to the Santa Rosa Avenue being located in largely urbanized area, which contains little to no suitable habitat for CTS. Furthermore, potential CTS suitable habitat impacted by the project (e.g., grassland along roadsides) will be restored to preconstruction conditions.

As mentioned in Section 7.2.1.3, *Anadromous Fish (Coho Salmon and Steelhead)*, there is critical habitat for coho salmon and steelhead within the South Fork Gualala River and its tributaries. The South Fork Gualala River is also designated freshwater EFH for coho salmon (NOAA 2023). Culvert replacement activities along Fort Ross Road may have the potential to impact anadromous fish and their habitat, including impacts to water quality; however, impacts are anticipated to be temporary, stream conditions will be restored to preconstruction conditions/contours as described in AMM-1i, and AMM-1c and AMM-1d would be implemented to avoid and minimize potential impacts to aquatic habitat associated with erosion, sedimentation, and release of hazardous substances (see Section 8.1, *General Measures*).

Although there is critical habitat for steelhead within the Petaluma River, Adobe Creek, and Calabazas Creek (NOAA 2023), project activities are not expected to directly impact steelhead critical habitat along any of these project areas.

# 7.5 Potential Impacts to Jurisdictional Wetlands/Waters

Approximately 14.92 acres (650,106.22 square feet) of potentially jurisdictional wetlands and other waters were mapped in the BSA, as depicted in Appendix E of the PJD (SWCA 2024). Anticipated impacts to jurisdictional wetlands and other waters were determined by proximity of these features to project areas as well as the specific work activities proposed along each road segment. Anticipated impacts to each potentially jurisdictional feature are not quantified in this report, but they are summarized below. Please refer to Appendix H of the PJD for a summary of all delineated features present within the BSA (SWCA 2024).

Impacts including culvert replacement and ditch excavation may directly impact several potentially jurisdictional features along Bloomfield Road, Fort Ross Road, King Road, Morelli Lane, and Sonoma Mountain Road. Such impacts will likely require the County to obtain a Section 404 Permit from the USACE, a Section 401 Water Quality Certification from the RWQCB, and a Section 1602 LSAA from the CDFW. For ground-disturbing construction activities in excess of 1 acre, a Construction General Permit from the RWQCB is required; the preparation of a Stormwater Pollution Prevention Plan (SWPPP) is a requirement of the Construction General Permit.

Impacts to jurisdictional features are anticipated to require authorizations from the afore-mentioned regulatory agencies. Impacts to all jurisdictional wetland/water features are anticipated to be less than significant with implementation of project water quality and restoration AMMs and those measures required under regulatory agency wetland/waters authorizations. The project applicant shall implement any additional AMMs and/or compensatory mitigation required by the regulatory agencies as conditions of approval.

## *7.5.1 Seasonal Wetlands*

Two seasonal wetlands occur within the BSA—one at Bloomington Road and one at Sonoma Mountain Road—within roadside ditches along the shoulders of their respective roads. Project activities are likely to directly impact these features due to their close proximity to adjacent roadways. Ditch excavation along Bloomfield Road is likely to impact the seasonal wetland present along this road segment. Project activities may also have indirect impacts, including the degradation of water quality from sediments or chemical spills that could run off-site and into these wetlands during or after operations.

## *7.5.2 Perennial Channel/Waters*

Three perennial channels occur adjacent to or cross beneath project roadways within the BSA. Named perennial channels within the BSA include the South Fork Gualala River, Petaluma River, and Calabazas Creek; however, project activities are not anticipated to directly impact these features. Potential impacts to riparian habitat associated with these features may occur but are expected to be minimal (< 0.1 acre per road segment) and limited to areas immediately adjacent to the proposed culvert replacements, ditch excavations, and guardrail installations. Project activities may have indirect impacts to these features from sediments or chemical spills that could run off-site and into adjacent waterways during or after operations. Impacts to riparian habitat associated with these features are not anticipated.

### 7.5.3 Intermittent Channel/Waters

Twelve intermittent channels were delineated in the BSA along Casa Grande Road, Corona Road, Fort Ross Road, King Road, Morelli Lane, Petaluma Hill Road, Santa Rosa Avenue, and Sonoma Mountain Road. Culvert replacements proposed along Fort Ross Road, King Road, Morelli Lane, and Sonoma Mountain Road may impact intermittent features within the project areas of these road segments. Potential impacts to riparian habitat associated with these features may also occur but are expected to be minimal (< 0.1 acre per road segment) and limited to areas immediately adjacent to the proposed culvert replacements, ditch excavations, and guardrail installations. Additionally, project activities may have indirect impacts to intermittent features that lie adjacent to project areas from sedimentation or chemical spills.

### 7.5.4 Ephemeral Channels and Ditches

One ephemeral channel and four ephemeral ditches were delineated in the BSA at the following road locations: Bloomfield Road, King Road, Morelli Lane, and Sonoma Mountain Road. Culvert replacements, ditch excavations, and guardrail installations proposed along these road segments may impact ephemeral features within the project areas of these road segments. Similarly to perennial and intermittent features, project activities may have indirect impacts to ephemeral features that lie adjacent to project areas from sedimentation or chemical spills. Potential impacts to riparian habitat associated with these features may also occur but are expected to be to be minimal (< 0.1 acre per road segment) and limited to areas immediately adjacent to the proposed culvert replacements, ditch excavations and guardrail installations.

# 8 RECOMMENDATIONS/AVOIDANCE AND MINIMIZATION MEASURES

The following AMMs and Best Management Practices (BMPs) are recommended to reduce or eliminate potentially significant biological impacts resulting from the project. These measures were developed in compliance with the *Santa Rosa Plain Conservation Strategy*, as appropriate. In addition to the measures listed in this section, the project may be required to adhere to additional measures as required by the County, CDFW, RWQCB, USACE, USFWS, or NOAA Fisheries. Table 9 lists the applicable AMMs by road segment.

## 8.1 General Measures

**AMM-1a.** **Environmental Training.** Environmental training shall be provided to all persons working on the project prior to the initiation of project-related activities. Training materials and briefings will include the following: a description of all biological resources that may be found on or in the vicinity of the project areas, the laws and regulations that protect those resources, the consequences of non-compliance with those laws and regulations, instructions for inspecting equipment each morning prior to activities, and a contact person in the event that protected biological resources are discovered any of the project areas.

**AMM-1b.** **Speed Limits.** All construction related traffic, and local traffic will be managed in accordance with the project traffic control plan within project areas. Construction equipment will maintain a speed limit of 15 miles per hour or less within unpaved project areas.

**AMM-1c.** **Avoid Wildlife.** If workers observe any wildlife, wildlife shall be allowed to move out of the way of their own volition before work continues. Animals shall not be picked up or moved in any way except by a qualified or permitted biologist, as appropriate.

**AMM-1d.** **Spill Prevention.** A spill prevention plan is recommended to ensure practices avoid spills or leakage of any other hazardous materials, such as petroleum. All equipment shall be maintained such that there shall be no leaks of automotive fluids such as gasoline, oils, or solvents. Hazardous materials such as fuels, oils, solvents, etc. shall be stored in sealable containers in a designated location that is at least 200 feet from aquatic habitats. All fueling and maintenance of vehicles and other equipment and staging areas shall occur at least 200 feet from any aquatic habitat.

**AMM-1e.** **Avoid Impacts to Waterways.** All spoils, such as dirt, excavated material, debris, and construction-related materials, generated during project activities shall be placed where they cannot enter nearby waterways. Spoils shall be covered or secured to prevent sediment from escaping. Once the spoil pile is no longer active, it shall be removed from the project area and disposed of lawfully at an appropriate facility. Plastic mono-filament netting (erosion control matting), rolled erosion control products, or similar material shall not be used to ensure wildlife does not become entrapped.

**AMM-1f.** **Limit Work Areas, Access Routes, and Staging Areas.** Access routes and number and size of staging and project work areas shall be limited to the minimum necessary to achieve the project goals. Routes and boundaries of the roadwork shall be clearly marked prior to initiating construction/grading.

**AMM-1g.** **Site Maintenance.** All foods and food-related trash items shall be enclosed in sealed trash containers at the end of each day and removed completely from the project site once every 3 days.

**AMM-1h.** **No Pets.** No pets shall be allowed anywhere in the project site during construction.

**AMM-1i**. **Project Restoration.** Project areas that are temporarily disturbed during construction, shall be restored to pre-project conditions to the maximum extent possible.

## 8.2 Species-Specific Measures

### *8.2.1 Special-Status Plants*

**AMM-2a.** **Botanical Surveys.** Where suitable habitat for special-status plants occurs along the project areas, a qualified biologist shall conduct a protocol-level botanical survey during the appropriate bloom period (varies by species). If no rare plants are observed, a letter report shall be prepared to document the results of the survey, and no additional measures are recommended. If rare plants are found at the project site, they shall be flagged by the project biologist and shall be fully avoided by project activities.

**AMM-2b.** **Prevent Spread of Invasive Weeds.** A qualified biologist shall ensure that the spread or introduction of invasive exotic plant species is avoided to the maximum extent possible, and all construction-related tools are free of debris that could contain the seeds of exotic plant species. Equipment shall be cleaned of debris and plant material prior to moving to another project area to prevent the spread of invasive plant species throughout the project.

### 8.2.2 Special-Status Amphibians

According to the *Santa Rosa Plain Conservation Strategy*, road projects that occur along roadways that are already developed, are unlikely to adversely affect CTS and therefore, are not required to mitigate for CTS (USFWS 2005). Similarly, such projects are unlikely to adversely affect CRLF or other amphibians of concern such as California giant salamander, FYLF, and red-bellied newt. However, because these species may have potential to occur within several of the project areas, the following AMMs are recommended to be implemented in order to avoid potential impacts CTS and other special-status amphibians.

**AMM-3a.** **Preconstruction Surveys.** A preconstruction survey for CTS, CRLF, and other amphibian SSC shall be conducted immediately prior to the start of ground-disturbing activities. Examination of burrows, dense vegetation, and/or other refugia shall be the focus of the surveys. Burrows of sufficient size to provide refugia for amphibians shall be flagged for avoidance. Surveys are to be conducted by a qualified biologist with experience surveying for these species. If CTS, CRLF, or any other special-status species are found, no work shall occur until the animal has left the project area. If the animal does not leave the area on its own, work shall remain halted and the USFWS and/or CDFW shall be contacted. If project activities are stopped for greater than 7 days, a follow-up preconstruction survey may be required within 48 hours prior to reinitiation of project activities.

**AMM-3b.** **Cover Holes and Trenches.** All steep-walled holes and trenches excavated during project activities shall be covered at the end of each workday to prevent wildlife entrapment. If holes or trenches are too large to large to cover, then an escape ramp shall be placed inside the hole or trench in order to provide a route of escape for wildlife.

**AMM-3c.** **Work Only During Dry Weather.** No work shall take place during rain events when there is 40% chance or higher potential for precipitation to occur. In addition, no work shall occur for 48 hours following rain events in which 0.25 inch of rain accumulated within 24 hours, unless the project site is cleared by a qualified biologist.

**AMM-3d.** **Work Only During Daylight Hours.** To the maximum extent possible, no work shall take place within 30 minutes before sunset to 30 minutes after sunrise to avoid animals that may disperse or forage during the night. If night work is required, a qualified biologist will be present to monitor any activities that may result in impacts to sensitive species.

**AMM-3e.** **Lighting.** Nighttime (security) lighting shall be directed downward away from surrounding habitats to avoid disrupting animals that may be dispersing.

### 8.2.3 Anadromous Fish

**AMM-4a.** **Avoid In-Water Work.** Work shall take place during dry conditions in streams identified as having potential to support anadromous fish. If in-water work must occur in streams identified as having potential to support anadromous fish, consultation with the appropriate resource agencies shall be required.

### 8.2.4 Northern Spotted Owl

**AMM-5a.** **Limit Noise Disturbance.** Project work that occurs within a 0.25-mile buffer of suitable NSO nesting habitat or currently (within 5 years) occupied NSO territory shall avoid

continuous (longer than 2 hours) noise levels that exceed 90 decibels from February 1 through July 9, unless surveys determine the surrounding habitat is unoccupied or any NSO present are non-nesting. Reduced buffers may be proposed, in coordination with the USFWS, for work in areas with moderate to high ambient (existing pre-project) noise levels based on *Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California* (USFWS 2020b). There are no restrictions on noise less than 90 decibels and no noise restrictions from July 10 through January 31.

### 8.2.5 Nesting Migratory Birds/Raptors

**AMM-6a.** **Nesting Surveys.** To the extent practical, all construction activities shall be performed outside the nesting season (September 1–February 1). If work must be performed during the nesting season, a preconstruction nesting bird survey shall be performed in all areas within 250 feet of project-related activities. If nests are found, an appropriately sized no-disturbance buffer shall be placed around the nest at the direction of the qualified biologist conducting the survey. Buffers shall remain in place until all young have fledged, or the biologist has confirmed that the nest has been naturally predated. Implementation of this measure shall ensure potential effects to nesting birds are less than significant.

**Table 9. Applicable Mitigation Measures by Road Segment**

| Project Locations | AMM-1a. Environmental Training | AMM-1b. Speed Limits | AMM-1c. Avoid Wildlife | AMM-1d. Spill Prevention | AMM-1e. Avoid Impacts to Waterways | AMM-1f. Limit Work Areas, Access Routes, and Staging Areas | AMM-1g. Site Maintenance | AMM-1h. No Pets | AMM-1i. Project Restoration | AMM-2a. Botanical Surveys | AMM-2b. Prevent Spread of Invasive Weeds | AMM-3a. Preconstruction Surveys | AMM-3b. Cover Holes and Trenches | AMM-3c. Work Only During Dry Weather | AMM-3d. Work Only During Daylight Hours | AMM-3f. Lighting | AMM-4a. Avoid In-Water Work | AMM-5a. Limit Noise Disturbance | AMM-6a. Nesting Surveys |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bloomfield Road | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | X |
| Casa Grande Road | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | X |
| Corona Avenue | X | X | X | X | X | X | X | X | X | | X | | | | | | | | X |
| Fort Ross Road | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| King Road | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | X |
| Lichau Road | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | X |
| Morelli Lane | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | X | X |
| Nuns Canyon Road | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | X | X |
| Petaluma Hill Road | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | X |
| Santa Rosa Avenue | X | X | X | X | X | X | X | X | X | | X | | | | | | | | X |
| Sonoma Mountain Road | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | X | X |
| Woodward Avenue | X | X | X | X | X | X | X | X | X | | X | | | | | | | | X |

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# APPENDIX A

## Project Location Maps

# APPENDIX B

## Soil and NWI Results Maps

# APPENDIX C

## Special-Status Species Evaluated

**Table C-1. Special-Status Species Considered for Potential Occurrence in the Project Area**

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| ***Plants*** | | | |
| Alkali milk-vetch<br>*(Astragalus tener* var. *tener)* | Annual herb that occurs in alkaline soils on playa wetland and vernal pool areas in valley grasslands (usually adobe clay) (CNPS 2023b).<br>Elevation: 5–195 feet.<br>Flowering Season: March–June. | --/--/1B.2 | **No Potential.** Suitable habitat for this species is absent from the BSA. There are records of this species in the vicinity of Casa Grande Rd. and Corona Rd.<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from the 1900s located approximately 1.8 miles southwest of Casa Grande Rd. (CDFW 2023a).<br>• There is one record of this species from the 1900s located approximately 1.3 miles southeast of Corona Rd. (CDFW 2023a).<br>These records have both been categorized as extirpated from the region. |
| Angel's hair lichen<br>*(Ramalina thrausta)* | Fruticose epiphytic lichen that occurs in North Coast coniferous forest on dead twigs and other lichens (CNPS 2023b).<br>Elevation: 245–1,410 feet. | --/--/2B.1 | **Likely to occur.** Suitable habitat is present in the BSA. There is one record of this species from 2004 that is located within the work area of Fort Ross Rd. The record was seen roadside along a river at the coastal fog belt. (CDFW 2023a). |
| Baker's goldfields<br>*(Lasthenia californica* ssp. *bakeri)* | Perennial herb that occurs in openings in closed-cone coniferous forest, coastal scrub, marshes and swamps, meadows and seeps (CNPS 2023b).<br>Elevation: 195–1,705 feet.<br>Flower Season: April–October. | --/--/1B.2 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There are no documented records of this species in the vicinity of the BSA (CDFW 2023a). Given the presence of records in other habitats of the County, this species is unlikely to occur in these degraded portions of coastal scrub and grassland openings in closed cone conifer forest found in the BSA. |
| Baker's larkspur<br>(*Delphinium bakeri*) | Perennial herb that occurs in broadleaf upland forest (e.g., mixed woodlands), coastal scrub, and foothill grassland, often in mesic decomposing shale slopes (CNPS 2023b).<br>Elevation: 260–1,000 feet.<br>Flower Season: March–May. | FE/SE/1B.1 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There is one record of this species from 1946 that is located 1.08 miles southwest of Morelli Ln. (CDFW 2023a). However, this species is only known from three locations (the two others occurring in Marin County) and tends to be found in decomposing shale within these mixed woodland and coastal scrub habitats. Substrates in the Morelli Ln project area lacked this preferred substrate for this species. |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| Baker's manzanita<br>*(Arctostaphylos bakeri* ssp. *Bakeri)* | Flowering shrub that occurs on serpentine soils in chaparral and broadleaf upland forest near the coast (CNPS 2023b).<br>Elevation: 245–985 feet.<br>Flower Season: February–April. | --/SR/1B.1 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There is one record of this species from 2015 that is located along Morelli Ln. The record was seen on serpentine and peridotite outcrops, roadside, chaparral, and open areas(CDFW 2023a). The portion of this segment that contains suitable serpentine substrates is limited toward the middle portion of Morelli Ln. where this species was not observed; this portion of the segment also lacked suitable chaparral habitat. |
| Baker's navarretia<br>*(Navarretia leucocephala ssp. Bakeri)* | Annual herb that occurs on mesic, adobe clay soils in cismontane woodland, lower coniferous forest, meadows and seeps, valley grassland, typically vernal pools (CNPS 2023b).<br>Elevation: 15–5,710 feet.<br>Flower Season: April–July. | --/--/1B.1 | **No potential.** Suitable habitat is absent along any of these segments. There are records of this species in the vicinity of Sonoma Mtn. Rd. and Wikiup Area. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 2018 that is located 1.75 miles southwest of Sonoma Mtn. Rd. The record was seen around a small vernal pool north of Bennett Valley Rd.<br>• There are 2 records of this species located within 2 miles of the project at the Wikiup Area. The most recent of which is from 1992 located approximately 1.95 miles northwest of the project. However, the closest record to the project is from 1990 and is located 1.25 miles northwest of the project.<br>However, the BSA lacks vernal pools or mesic adobe soils within the herbaceous wetlands present in the BSA to support this species. |
| Bent-flowered fiddleneck<br>*(Amsinckia lunaris*) | Annual herb that occurs in gravelly (often serpentine) openings in grasslands, cismontane woodlands, and coastal bluff scrub (CNPS 2023b).<br>Elevation: 10–1,640 meters.<br>Flowering Season: March–June. | --/--/1B.2 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There is one record of this species from 1940 that is located 1.8 miles north of Santa Rosa Ave in clay soil (CDFW 2023a). However, suitable gravelly serpentine openings are limited in this segment, and where coastal bluff scrub occurs in the BSA, it lacks serpentine substrates and is patchy and fragmented. |
| Big-scale balsamroot<br>(*Balsamorhiza macrolepis)* | Perennial herb that occurs in open grassy or rocky slopes and openings in chaparral, cismontane woodlands and grasslands, sometimes serpentine (CNPS 2023b).<br>Elevation: 150–5,100 feet.<br>Flowering Season: March–July. | --/--/1B.2 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There is one record of this species from 1997 that is located 1.7 miles northeast of Petaluma Hill Rd. The record was seen growing on basalt outcropping (CDFW 2023a). However, most openings in woodlands and chaparral within the BSA are patchy and fragmented along road borders with limited open connection to grasslands not associated with agricultural mixed uses or active cultivation. |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| Blasdale's bent grass *(Agrostis blasdalei)* | Perennial grass like herb that occurs in dunes, coastal prairie, and coastal bluff areas (CNPS 2023b).<br>Elevation: <490 feet.<br>Flowering Season: May–July. | --/--/1B.2 | **No potential.** Suitable habitat is absent from the BSA. There are no documented records of this species in the vicinity of the BSA(CDFW 2023a). The BSA lacks suitable dune, coastal prairie and coastal bluff habitat to support this species. |
| Bristly sedge *(Carex comosa)* | Perennial grasslike herb that occurs in wetland areas at the edge of lakes/pools, marshes swamps and valley and coastal prairies (CNPS 2023b).<br>Elevation: <2,050 feet.<br>Flowering Season: July–September. | --/--/2B.1 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). Few herbaceous wetlands occur in the BSA and are limited to roadside stringers within ditches. Where herbaceous wetlands were found, this species was not observed. Additionally, the BSA lacks lakes and pools where suitable marsh and swamp habitat would otherwise support this species. |
| Brownish beaked-rush *(Rhynchospora capitellata)* | Perennial grasslike herb that occurs in mesic areas, typically wet meadows, seeps, fens, marshes and swamps in lower and upper montane coniferous forests (CNPS 2023b).<br>Elevation: 150–6,560 feet.<br>Flowering Season: July–August. | --/--/2B.2 | **No potential.** Suitable habitat is absent in the BSA. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). Where lower montane coniferous forest occur, we meadows and marshes are absent. The herbaceous wetlands that occur in the BSA are limited to stringers along the roadside in grassland habitat disjunct from conifer forests. |
| Burke's goldfields *(Lasthenia burkei)* | Annual herb that occurs in vernal pools, wet meadows and seeps (CNPS 2023b).<br>Elevation: 50–1,970 feet.<br>Flowering Season: April–June. | FE/SE/1B.1 | **No potential.** Suitable habitat is absent in the BSA.<br>There are records of this species in the vicinity of Petaluma Hill Rd., Santa Rosa Ave, and Wikiup Area. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 2009 that is located 1.92 miles northwest of Petaluma Hill Rd. The record was seen around a small vernal pool north of Bennett Valley Rd.<br>• There are 3 records of this species located within 2 miles of the project at Santa Rosa Ave. The most recent of which is from 2020 located approximately 0.55 mile west of the project. However, the closest record to the project is from 2009 and is located 0.08 mile southeast of the project.<br>• There are 10 records of this species located within 2 miles of the project Wikiup Area. The most recent of which is from 2021 located approximately 1.2 miles south of the project. However, the closest record to the project is from 1998 and is located 0.5 mile southeast of the project.<br>However, these records occur in vernal pool habitat which is absent from the BSA, as are suitable wet meadows and seeps to support this species. |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| California beaked-rush (*Rhynchospora californica)* | Perennial grass-like herb that occurs in freshwater marshes and swamps, seeps, meadows, bogs, fens in lower montane coniferous forest (CNPS 2023b).<br>Elevation: 150–3,315 feet.<br>Flowering Season: May–July. | --/--/1B.1 | **No potential.** Suitable habitat is absent from the BSA as the project area lacks suitable marsh and swamp, seep bog, fen habitat. The herbaceous wetlands occurring in the BSA are seasonal and limited in distribution to areas disjunct from the lower montane conifer forests. There are no records of this species in the vicinity of the BSA (CDFW 2023a). |
| Calistoga ceanothus *(Ceanothus divergens)* | Shrub that occurs on rocky, serpentine, volcanic substrates in chaparral and pine/oak woodlands (CNPS 2023b).<br>Elevation: 560–3115 feet.<br>Flowering Season: February–April | --/--/1B.2 | **Unlikely to occur.** Marginal suitable habitat is present along Nuns Canyon Rd and Morelli Ln. where small portions of serpentine mixed oak woodlands occur. There are no records of this species in the vicinity of the BSA (CDFW 2023a). Volcanic substrates and chaparral habitat is absent from the BSA. |
| Cedars buckwheat (*Eriogonum cedrorum*) | Perennial herb that occurs in serpentine closed cone coniferous forests (CNPS 2023b).<br>Elevation: 3,937–5,921 feet.<br>Flowering Season: May–October. | --/--/1B.3 | **No potential.** Suitable habitat is absent in the BSA. Serpentine soils within the BSA do not occur in habitats mapped as closed cone coniferous forests. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Cedars fairy-lantern *(Calochortus raichei)* | Perennial herb that occurs in closed-cone pine forests and Chaparral woodlands often in serpentine areas (CNPS 2023b).<br>Elevation: 655–1,610 feet.<br>Flowering Season: May–August. | --/--/1B.2 | **No potential.** Suitable habitat is absent in the BSA. Serpentine soils within the BSA do not occur in habitats mapped as closed cone coniferous forests. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Cedars manzanita (*Arctostaphylos bakeri* ssp. *sublaevis*) | Shrub that occurs in closed-cone pine forests, mixed evergreen forest, and chaparral areas (CNPS 2023b).<br>Elevation: 605–2,495 feet.<br>Flowering Season: February–March. | --/SR/1B.2 | **No potential.** Suitable habitat is absent in the BSA. Serpentine soils within the BSA do not occur in habitats mapped as closed cone coniferous forests. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Clara Hunt's milk-vetch (*Astragalus claranus*) | Annual herb that occurs in open grassy areas with thin clay soils (CNPS 2023b).<br>Elevation: 245–900 feet.<br>Flowering Season: March–May. | FE/SE/1B.1 | **Unlikely to occur.** Marginally suitable habitat is present in the BSA. Although there are no CNDDB records of this species in the vicinity of any of the road segments (CDFW 2023a), this species has been documented by CNPS in Sonoma County near Fountain grove Lodge in Santa Rosa. This species is only known to occur in Sonoma County at 5 documented locations. |
| Coastal triquetrella (*Triquetrella californica*) | Moss that occurs in rocky areas of coastal grasslands (CNPS 2023b).<br>Elevation: 35–330 feet | --/--/1B.2 | **No potential to occur.** Suitable habitat is absent in the BSA. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Colusa layia (*Layia septentrionalis*) | Annual herb that occurs in foothill woodlands, chaparral, and valley grasslands often in serpentine or sandy soils (CNPS 2023b).<br>Elevation: 330–3,595 feet.<br>Flowering Season: April–May. | --/--/1B.2 | **Likely to occur.** Suitable habitat is present in the BSA. There is one record of this species from 2015 that is located 1.95 miles northeast of Sonoma Mountain Rd. Exact location is unknown (CDFW 2023a). |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| Congested-headed hayfield tarplant<br>*(Hemizonia congesta* ssp. *Congesta)* | Annual herb that occurs in northern coastal scrub, woodlands, and valley grasslands (CNPS 2023b).<br>Elevation: 65–1835 feet.<br>Flowering Season: April–December. | --/--/1B.2 | **Likely to occur.** Suitable habitat is present in the BSA. There are records of this species in the vicinity of Bloomfield Rd., Casa Grande Rd. Corona Rd., King Rd., Morelli Ln., Sonoma Mtn. Rd., and Woodward Ave. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 2007 that is located 0.7 miles southwest of Bloomfield Rd. The record was seen around a small gully on a rocky facing northwest in annual grassland.<br>• There is one record of this species from 1930 that is located 1.6 miles southwest of Casa Grande Rd. Exact location is unknown.<br>• There is one record of this species from 1930 that is located 1.3 miles southeast of Corona Rd. Exact location is unknown.<br>• There is one record of this species from 1961 that is located 1.77 miles southwest of King Rd. Exact location is unknown.<br>• There is one record of this species from 2015 that is located 0.1 mile north of Morelli Ln. Record found on serpentine substrate. The exact location is unknown.<br>• There is one record of this species from 2013 that is located 0.53 mile south of Sonoma Mtn. Rd. Record found alongside open-canopy grassland.<br>• There is one record of this species from 1916 that is located 0.63 mile southwest of Woodward Ave. The exact location is unknown.<br>Species is unlikely to occur in developed areas such as Corona Rd., and Woodward Ave. |
| Contra Costa goldfields<br>*(Lasthenia conjugens)* | Annual herb that occurs in wetlands and riparian areas in valley grasslands (CNPS 2023b).<br>Elevation: <1,540 feet.<br>Flowering Season: March–June. | FE/--/1B.1 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. This is species is known only by one occurrence in Sonoma County, located on private land east of the City of Petaluma. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Crystal Springs lessingia<br>*(Lessingia arachnoidea)* | Annual herb that occurs in serpentine soils in coastal scrub, woodlands, and valley grasslands (CNPS 2023b).<br>Elevation: 195–655 feet.<br>Flowering Season: July–October. | --/--/1B.2 | **Likely to occur.** Suitable habitat is present in the BSA. There is one record of this species from 1996 that is located 1.7 miles northwest of Morelli Ln. The record was seen at a large serpentine outcrop (CDFW 2023a). Serpentinite soils are present along the Morelli Ln. segment. |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| Cunningham Marsh cinquefoil<br>*(Potentilla uliginosa)* | Perennial herb that occurs in low nutrient wetlands (CNPS 2023b).<br>Elevation: 100–130 feet.<br>Flowering Season: May–August. | --/--/1A | **No potential.** While marginal suitable habitat is present in the BSA, this species is presumed to be extinct. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Dwarf downingia<br>*(Dowiningia pusilla)* | Annual herb that occurs in wetlands and riparian areas in foothill woodlands and valley grasslands (CNPS 2023b).<br>Elevation: <1,460 feet.<br>Flowering Season: March–May. | --/--/2B.2 | **Unlikely to occur.** Suitable habitat is present in the BSA. There are records of this species in the vicinity of Sonoma Mtn. Rd. and Nuns Canyon Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 2006 that is located 1.56 miles northeast of Sonoma Mtn. Rd. The record was seen around two vernal pools.<br>• There is one record of this species from 2010 that is located 1.46 miles southwest of Nuns Canyon Rd.<br>However, project activities are unlikely to impact riparian habitats along these segments. |
| Fragrant fritillary<br>*(Fritillaria liliacea)* | Perennial herb that occurs in cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland. Often occurs in serpentinite areas (CNPS 2023b).<br>Elevation: <1,345 feet.<br>Flowering Season: February–April. | --/--/1B.2 | **Likely to occur.** Suitable habitat is present in the BSA. There are records of this species in the vicinity of Casa Grande Rd., Corona Rd., Morelli Ln., Santa Rosa Ave. and Sonoma Mtn. Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 1880 that is located 1.7 miles southwest of Casa Grande Rd. The exact location is unknown.<br>• There is one record of this species from 1880 that is located 1.3 miles southeast of Corona Rd. The exact location is unknown.<br>• There is one record of this species from 2013 that is located 0.45 mile east of Santa Rosa Ave. The record was found on serpentine grassland with chapparal.<br>• There is one record of this species from an unknown date that is located 1.25 miles southeast of Sonoma Mtn. Rd. The exact location is unknown.<br>Species is unlikely to occur in developed areas such as Corona Rd., and Santa Rosa Ave. |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| Franciscan onion (*Allium peninsulare* var. *franciscanum)* | Perennial herb that occurs in cismontane woodland, valley and foothill grassland. Can be found growing within clay serpentinite and volcanic soils (CNPS 2023b).<br>Elevation: 170–1,000 feet.<br>Flowering Season: May–June. | --/--/1B.2 | **Likely to occur.** Suitable habitat is present in the BSA. There are records of this species in the vicinity of Sonoma Mtn. Rd., Nuns Canyon Rd., Casa Grande Rd. and Corona Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 1950 that is located 1.7 miles northeast of Sonoma Mtn. Rd. The exact location is unknown.<br>• There is one record of this species from 1950 that is located 1.75 miles west of Nuns Canyon Rd. The exact location is unknown.<br>• There is one record of this species from 1880 that is located 1.7 miles southwest of Casa Grande Rd. The exact location is unknown.<br>• There is one record of this species from 1880 that is located 1.3 miles southeast of Corona Rd. The exact location is unknown.<br>Species is unlikely to occur in developed areas such as Corona Rd. |
| Golden larkspur *(Delphinium luteum)* | Perennial herb that occurs in coastal scrub, coastal prairie, and chaparral (CNPS 2023b).<br>Elevation: <330 feet.<br>Flowering Season: March–May. | FE/SR/1B.1 | **Unlikely to occur.** Suitable habitat is present in the BSA. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Greene's narrow-leaved daisy (*Erigeron greenei)* | Perennial herb that occurs on serpentine and rocky alluvium in chaparral, woodlands, and conifer forests (CNPS 2023b).<br>Elevation: 260–3,295 feet.<br>Flowering Season: May–September. | --/--/1B.2 | **Likely to occur.** Suitable habitat is present in the BSA, where serpentine soils are present along Morelli Rd. There are 2 records of this species at Morelli Ln. (CDFW 2023a). The most recent and closest to Morelli Ln. is from 1947 located within the project area. |
| Hoffman's bristly jewelflower *(Streptanthus glandulosus* ssp. *hoffmanii)* | Annual herb found in serpentine outcrops within chaparral, cismontane woodland, valley and foothill grassland (CNPS 2023b).<br>Elevation: 395–1,560 feet.<br>Flowering Season: March–July. | --/--/1B.3 | **Unlikely to occur.** Suitable habitat is absent in the BSA. Serpentine soils within the BSA do not occur in habitats mapped as closed cone coniferous forests. There is one record of this species from 1964 that is located 0.9 mile southeast of Fort Ross Rd. The record was seen on basic igneous rock (CDFW 2023a). |
| Holly-leaved ceanothus *(Ceanothus purpureus)* | Shrub that occurs in chaparral habitat, often in volcanic substrates and along slopes (CNPS 2023b).<br>Elevation: 395–2,100 feet.<br>Flowering Season: February–May. | --/--/1B.2 | **Unlikely to occur.** Although suitable habitat is present in the BSA along Fort Ross Road, this species is easily identified year-round and was not observed within the BSA during reconnaissance level surveys. There is one record of this species from 1938 that is located 0.9 mile southeast of Fort Ross Rd. The record was seen in the moist soil of a steep rocky, non-serpentinite bank (CDFW 2023a). |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| Jepson's leptosiphon (*Leptosiphon jepsonii)* | Annual herb that usually occurs in volcanic soils within chaparral, cismontane woodland, valley and foothill grassland (CNPS 2023b).<br>Elevation: 330–1,640 feet.<br>Flowering Season: March–May. | --/--/1B.2 | **Likely to occur.** Suitable habitat is present in the BSA. There are records of this species in the vicinity of Lichau Rd., Sonoma Mtn. Rd., and Nuns Canyon Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 1981 that is located 1.8 miles west of Lichau Rd.<br>• There are 2 records of this species located within 2 miles of the project at Sonoma Mtn. Rd. The most recent of which is from 2016 located approximately 1.61 miles northeast of the project. However, the closest record to the project is from 1981 and is located 0.8 miles south of the project.<br>• There are 3 records of this species located within 2 miles of the project at Nuns Canyon Rd. and the most recent and closest record are from 2006 that is located 0.9 mile northwest. The record was mapped along hills and flat areas around drainage.<br>Volcanic soils are not present along Lichau Rd., however. |
| Kenwood Marsh checkerbloom *(Sidalcea oregana* ssp. *valida)* | Perennial herb that occurs in wetlands and marshes (CNPS 2023b).<br>Elevation: 375–490 feet.<br>Flowering Season: June–September. | FE/SE/1B.1 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There are records of this species in the vicinity of Sonoma Mtn. Rd., Nuns Canyon Rd. (CDFW 2023a). |
| Legenere *(Legenere limosa)* | Annual herb that occurs in wetland areas, vernal pools, and ponds (CNPS 2023b).<br>Elevation: <2,885 feet.<br>Flowering Season: April–June. | --/--/1B.1 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There are records of this species in the vicinity of Sonoma Mtn. Rd., and Lichau Rd. (CDFW 2023a). |
| Many-flowered navarretia (*Navarretia leucocephala* ssp. *plieantha)* | Annual herb that occurs in vernal pools and wetlands (CNPS 2023b).<br>Elevation: 100–3,115 feet.<br>Flowering Season: April–June. | FE/SE/1B.2 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Marin dwarf flax (*Hesperolinon congestum*) | Annual herb that occurs in serpentinite areas within chaparral, valley and foothill grassland (CNPS 2023b).<br>Elevation: <1,215 feet.<br>Flowering Season: April–July. | FT/ST/1B.1 | **Unlikely to occur.** Suitable habitat is present in the BSA. However, serpentinite soils do not occur where suitable vegetation communities are present. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Marsh microseris *(Microseris paludosa)* | Perennial herb that occurs in wetlands, riparian grasslands, northern coastal scrub, cismontane woodland and closed-cone pine forests (CNPS 2023b).<br>Elevation: <1,165 feet.<br>Flowering Season: April–June. | --/--/1B.2 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There is one record of this species from 1937 that is located 0.9 miles north of King Rd. (CDFW 2023a). However, no wetland habitats are present along this segment. |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| Marsh pea<br>*(Lathyrus palustris)* | Perennial herb that occurs in coastal wetlands, marshes, and bogs (CNPS 2023b).<br>Elevation: <330 feet.<br>Flowering Season: May–August. | --/--/2B.2 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Mount Burdell jewelflower<br>(*Streptanthus anomalus*) | Annual herb that occurs in serpentine and openings within cismontane woodland (CNPS 2023b).<br>Elevation: 165–490 feet.<br>Flowering Season: May–June. | --/--/1B.1 | **Unlikely to occur.** Suitable habitat is absent in the BSA. Serpentine soils within the BSA do not occur in habitats mapped as cismontane woodland. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Morrison's jewelflower<br>*(Streptanthus morrisonii* ssp. *morrisonii)* | Perennial herb that occurs in serpentine and rocky chaparral (CNPS 2023b).<br>Elevation: 395–1,920 feet.<br>Flowering Season: May–September. | --/--/1B.2 | **Unlikely to occur.** Suitable habitat is absent in the BSA. Serpentine soils within the BSA do not occur in habitats mapped as chaparral. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Napa bluecurls<br>*(Trichostema ruygtii)* | Annual herb that occurs in open areas, generally in thin clay soils within chaparral, oak woodland, mixed evergreen forests, and vernal pools in grasslands (CNPS 2023b).<br>Elevation: 100–2,230 meters.<br>Flowering Season: June–October. | --/--/1B.2 | **Unlikely to occur.** Suitable habitat is present in the BSA. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Napa false indigo<br>*(Amorpha californica* var. *napensis)* | Shrub that occurs in openings within broad-leafed upland forest, chaparral and cismontane woodland (CNPS 2023b).<br>Elevation: 165–6,560 feet.<br>Flowering Season: April–July. | --/--/1B.2 | **Likely to occur.** Suitable habitat is present in the BSA. There are records of this species in the vicinity of Fort Ross Rd., Sonoma Mtn. Rd., and Nuns Canyon Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 1980 that is located 0.7 mile east of Fort Ross Rd.<br>• There is one record of this species from 2016 that is located 1.08 miles west of Sonoma Mtn. Rd. The record was seen in a wet meadow grassland.<br>• There are 3 records of this species located within 2 miles of the project at Nun Cyn. Rd. and the most recent and closest record are from 2022 that is located 0.78 mile northeast. The record was mapped along north facing slopes adjacent to Calabazas Creek. |
| Narrow-anthered brodiaea<br>*(Brodiaea leptandra)* | Perennial herb that occurs in open mixed-evergreen forest and chaparral in gravelly soils (CNPS 2023b).<br>Elevation: 360–3,000 feet.<br>Flowering Season: May–July. | --/--/1B.2 | **Likely to occur.** Suitable habitat is present in the BSA. There is one record of this species from 2008 that is located 1.5 miles southeast of Nuns Canyon Rd. found within chamise chaparral (CDFW 2023a). |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| North Coast semaphore grass *(Pleuropogon refractus)* | Perennial grass like herb that occurs in wetlands as well as redwood forests, Douglas-fir forests, and yellow pine forests (CNPS 2023b).<br>Elevation: <2,200 feet.<br>Flowering Season: April–August. | --/ST/1B.1 | **Unlikely to occur.** Suitable habitat is present in the BSA. However, no wetlands occur where conifer forests are present within the BSA. There is one record of this species from 2010 that is located 1.2 miles southwest of Sonoma Mountain Rd. found within freshwater marsh/seasonal wet drainage (CDFW 2023a). |
| Oval-leaved viburnum *(Viburnum ellipticum)* | Shrub that occurs in yellow pine forest and chaparral habitats, generally along north-facing slopes (CNPS 2023b).<br>Elevation: 705–4,595 feet.<br>Flowering Season: May–August. | --/--/2B.3 | **Unlikely to occur.** Suitable habitat is present in the BSA. However, there are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Pacific Grove clover *(Trifolium polyodont)* | Annual herb that occurs in closed-cone pine forest, coastal prairie, and wetland areas (CNPS 2023b).<br>Elevation: <1,395 feet.<br>Flowering Season: April–June. | --/--/1B.1 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There are records of this species in the vicinity of Casa Grande Rd. and Corona Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 1880 that is located 1.7 miles southwest of Casa Grande Rd. The exact location is unknown.<br>• There is one record of this species from 1880 that is located 1.3 miles southeast of Corona Rd. The exact location is unknown. |
| Pappose tarplant (*Centromadia parryi* ssp. *parryi)* | Annual herb that occurs in mesic, grasslands, coastal salt marshes, and alkaline springs (CNPS 2023b).<br>Elevation: <1,380 feet.<br>Flowering Season: May–November. | --/--/1B.2 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There are records of this species in the vicinity of Lichau Rd., Woodward Ave. and Corona Rd. (CDFW 2023a). Species is unlikely to occur in developed areas such as Corona Rd., and Woodward Ave.<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 1987 that is located 1.77 miles south of Lichau Rd. The exact location is unknown.<br>• There is one record of this species from 1987 that is located within the project area of Woodward Ave. The exact location is unknown.<br>• There is one record of this species from 1987 that is located 1.38 miles southeast of Corona Rd. The exact location is unknown. |
| Pennell's bird's-beak (*Cordylanthus tenuis* ssp. *capillaris)* | Annual herb that occurs in serpentine soils in closed-cone pine forest and chaparral habitats (CNPS 2023b).<br>Elevation: 150–1,000 feet.<br>Flowering Season: June–July. | FE/SE/1B.2 | **Unlikely to occur.** Suitable habitat is absent in the BSA. Serpentine soils within the BSA do not occur in habitats mapped as chaparral. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| Peruvian dodder<br>*(Cuscuta obtusiflora* var. *glandulosa)* | Annual herb or vine (parasitic) that occurs on other herbs including *Althernathera, Dalea, Lythrum, Polygonum, Xanthium* (CNPS 2023b).<br>Elevation: 50–920 feet.<br>Flowering Season: July–October. | --/--/2B.2 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Petaluma popcornflower<br>*(Plagiobothrys mollis* var. *vestitus)* | Perennial herb that occurs in coastal marsh and riparian valley grasslands (CNPS 2023b).<br>Elevation: 35–165 feet.<br>Flowering Season: May–July. | --/--/1A | **Unlikely to occur.** Suitable habitat is present in the BSA. There are records of this species in the vicinity of Casa Grande Rd. and Corona Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 1880 that is located 1.7 miles southwest of Casa Grande Rd. The exact location is unknown.<br>• There is one record of this species from 1880 that is located 1.3 miles southeast of Corona Rd. The exact location is unknown.<br>Species is unlikely to occur in developed areas such as Corona Rd. Species is likely locally extirpated |
| Pitkin Marsh lily<br>*(Lilium pardalinum* ssp. *pitkinense)* | Perennial herb that occurs in freshwater marshes, meadows, seeps and swamps (CNPS 2023b).<br>Elevation: 115–215 feet.<br>Flowering Season: June–July. | FE/SE/1B.1 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There are records of this species in the vicinity of Bloomfield Rd., King Rd., Casa Grande Rd. and Corona Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 2019 that is located within Bloomfield Rd. The record was found in azalea thicket, under oaks, and in open, damp ground near a creek.<br>• There is one record of this species from 2019 that is located 1.85 miles west of King Rd. The record was found in azalea thicket, under oaks, and in open, damp ground near a creek.<br>• There is one record of this species from 1880 that is located within Casa Grande Rd. The exact location is unknown.<br>• There is one record of this species from 1880 that is located 0.71 miles south of Corona Rd. The exact location is unknown. |
| Pitkin Marsh paintbrush<br>(*Castilleja uliginosa)* | Perennial herb that occurs in freshwater marshes and swamps (CNPS 2023b).<br>Elevation: 785 feet.<br>Flowering Season: June–July. | --/SE/1A | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| Point Reyes checkerbloom *(Ceanothus gloriosus* var. *gloriosus)* | Perennial rhizomatous herb that occurs in coastal or freshwater marshes and swamps (CNPS 2023b).<br>Elevation: <245 feet.<br>Flowering Season: March–April. | --/--/1B.2 | **Unlikely to occur.** Suitable habitat is not present in the BSA. There are records of this species in the vicinity of Casa Grande Rd. and Corona Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 1880 that is located 1.7 miles southwest of Casa Grande Rd. The exact location is unknown.<br>• There is one record of this species from 1880 that is located 1.3 miles southeast of Corona Rd. The exact location is unknown. |
| Point Reyes salty bird's-beak *(Chloropyron maritimum* ssp. *palustre)* | Annual herb that occurs in coastal salt marsh (CNPS 2023b).<br>Elevation: <35 feet.<br>Flowering Season: May–October. | --/--/1B.2 | **No potential to occur.** Suitable habitat is not present in the BSA. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Purple-stemmed checkerbloom *(Sidalcea malviflora* ssp. *purpurea)* | Perennial herb that occurs in meadows, open coastal forest, and coastal prairie (CNPS 2023b).<br>Elevation: 50–280 feet.<br>Flowering Season: May–June. | --/--/1B.2 | **No potential to occur.** Suitable habitat is not present in the BSA. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Rincon Ridge ceonothus *(Ceanothus confusus)* | Shrub that occurs in closed-cone pine forests, foothill woodlands, and chaparral sometimes in volcanic or serpentinite areas (CNPS 2023b).<br>Elevation: 245–3,495 feet.<br>Flowering Season: February–April. | --/--/1B.1 | **No potential to occur.** Suitable habitat is absent in the BSA. Serpentine soils within the BSA do not occur in habitats mapped as closed cone coniferous forests. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). Furthermore, this shrub would have been clearly visible during field surveys and was not observed during reconnaissance level surveys. |
| Rincon Ridge manzanita (*Arctostaphylos stanfordiana* ssp. *decumbens)* | Shrub that occurs in chaparral habitats sometimes in volcanic or serpentinite areas (CNPS 2023b).<br>Elevation: 245–1,215 feet.<br>Flowering Season: February–April. | --/--/1B.1 | **Unlikely to occur.** Suitable habitat is absent in the BSA. Serpentine soils within the BSA do not occur in habitats mapped as chaparral. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Round-headed beaked-rush *(Rhynchospora globularis)* | Perennial grass like herb that occurs in freshwater marshes (CNPS 2023b).<br>Elevation: 150–195 feet.<br>Flowering Season: July–August. | --/--/2B.1 | **No potential to occur.** Suitable habitat is absent in the BSA. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
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| Saline cover<br>*(Trifolium hydrophilum)* | Annual herb that occurs in salt marshes and open areas in alkaline soils (CNPS 2023b).<br>Elevation: <985 feet.<br>Flowering Season: April–June. | --/--/1B.2 | **Unlikely to occur.** Suitable habitat is absent in the BSA. There are records of this species in the vicinity of Morelli Ln., and Santa Rosa Ave. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 1995 that is located 0.3 mile south of Morelli Ln. The exact location is unknown.<br>• There are 3 records of this species within 2 miles of the Santa Rosa Ave. project area. The nearest and most recent record is from 2013 and is located 0.73 mile southwest of the project area. The record was seen in historically grazed and tilled clay-rich vernal pools. |
| Santa Cruz clover<br>*(Trifolium buckwestiorum*) | Annual herb that occurs in mixed evergreen forest and coastal prairie (CNPS 2023b).<br>Elevation: 115–2,000 feet.<br>Flowering Season: May–June. | --/--/1B.1 | **Unlikely to occur.** Suitable habitat is absent in the BSA. There is one record of this species from 2008 that is located 1.65 miles north of Santa Rosa Ave. The exact location of this record is unknown (CDFW 2023a). |
| Sebastopol meadowfoam<br>*(Limnanthes vinculans)* | Annual herb that occurs in freshwater wetlands, meadows, seeps, vernal pools, mesic areas of valley and foothill grasslands (CNPS 2023b).<br>Elevation: <1,000 feet.<br>Flowering Season: April–May. | FE/SE/1B.1 | **Unlikely to occur.** Marginal suitable wetland habitat is present in the BSA. There are records of this species in the vicinity of Petaluma Hill Rd., and Santa Rosa Ave. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 2020 that is located 1.62 miles northwest of Petaluma Hill Rd. The record was found within created basins (shallow excavations in natural clay soils).<br>• There are 7 records of this species in the vicinity of the Santa Rosa Ave. project area. The nearest record is from 2018 and is located 0.25 mile west of Santa Rosa Ave. The most recent record is from 2020 and is located 0.54 mile east of Santa Rosa Ave. (CDFW 2023a).<br>Species is unlikely to occur in developed areas such as Santa Rosa Ave. |
| Serpentine daisy<br>*(Erigeron serpentinus)* | Perennial herb that occurs in serpentine chaparral (CNPS 2023b).<br>Elevation: 195–2,200 feet.<br>Flowering Season: May–August. | --/--/1B.3 | **Unlikely to occur.** Suitable habitat is absent in the BSA. Serpentine soils within the BSA do not occur in habitats mapped as chaparral. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Soft salty bird's-beak<br>*(Chloropyron molle* ssp. *molle)* | Annual herb that occurs in coastal salt marshes (CNPS 2023b).<br>Elevation: <10 feet.<br>Flowering Season: July–November. | FE/SR/1B.2 | **No potential to occur.** Suitable habitat is absent in the BSA. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| Sonoma alopecurus *(Alopecurus aequalis* var. *sonomensis)* | Perennial grass like herb occurs in freshwater wetlands and riparian scrub (CNPS 2023b).<br>Elevation: <1,200 feet.<br>Flowering Season: May–July. | FE/--/1B.1 | **Likely to occur.** Marginal suitable wetland habitat is present in the BSA. There are records of this species in the vicinity of Morelli Ln. and Bloomfield Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There are 3 records of this species within 2 miles of the Morelli Ln. project area. The nearest and most recent record is from 1987 and is located 0.8 mile south of the project area. The record was seen in open, marshy ground.<br>• There is one record of this species from 1880 that is located within Bloomfield Rd. The exact location is unknown.<br>Riparian scrub is present along Morelli Ln. A roadside wetland is present along Bloomfield Rd. |
| Sonoma beardtongue *(Penstemon newberryi* var. *sonomensis)* | Perennial herb that occurs in rock outcrops within chaparral (CNPS 2023b).<br>Elevation: 2,295–4,495 feet.<br>Flowering Season: April–August | --/--/1B.3 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Sonoma ceanothus *(Ceanothus sonomensis)* | Shrub that occurs in sandy, serpentine or volcanic substrates in chaparral (CNPS 2023b).<br>Elevation: 705–2,625 feet.<br>Flowering Season: March–April. | --/--/1B.2 | **Unlikely to occur.** Although suitable habitat is present in the BSA along Nuns Canyon Road, this species is identifiable year-round and was not observed within the BSA during reconnaissance level surveys. There are 3 records of this species in the vicinity of Nuns Canyon Rd. The closest and most recent record for this species is from 2013 and is located 1.38 miles southeast of the project area (CDFW 2023a). |
| Sonoma spineflower *(Chorizanthe valida)* | Annual herb that occurs in coastal prairie and sandy habitats (CNPS 2023b).<br>Elevation: <1,000 feet.<br>Flowering Season: June–August. | FE/SE/1B.1 | **Unlikely to occur.** Suitable habitat is absent in the BSA. There are records of this species in the vicinity of Casa Grande Rd. and Corona Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 1880 that is located 1.7 miles southwest of Casa Grande Rd. The exact location is unknown.<br>• There is one record of this species from 1880 that is located 1.3 miles southeast of Corona Rd. The exact location is unknown. |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
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| Sonoma sunshine<br>*(Blennosperma bakeri)* | Annual herb that occurs in vernal pools, freshwater wetlands, and mesic areas within valley grasslands (CNPS 2023b).<br>Elevation: <360 feet.<br>Flowering Season: February–April. | FE/SE/1B.1 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There are records of this species in the vicinity of Santa Rosa Ave., Petaluma Hill Rd. and Nuns Canyon Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There are 7 records of this species within 2 miles of the Morelli Ln. project area. The nearest and most recent record is from 2018 and is located 0.2 mile west of the project area. The record was seen in vernal pools and seasonal wetlands.<br>• There is one record of this species from 2011 that is located 1.63 miles northwest of Petaluma Hill Rd. The record was found within created basins (shallow excavations in natural clay soils).<br>• There is one record of this species from 2017 that is located 1.62 miles southeast of Nuns Canyon Rd. The record was found within a vernal pool.<br>Species is unlikely to occur in developed areas such as Santa Rosa Ave. |
| Swamp harebell<br>(*Eastwoodiella californica)* | Perennial herb that occurs in marshy areas within coniferous forest, closed-cone pine forest, and coastal prairie (CNPS 2023b).<br>Elevation: <1,330 feet.<br>Flowering Season: June–September | --/--/1B.2 | **Unlikely to occur.** Marginal suitable habitat is present in the BSA. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Thin-lobed horkelia<br>*(Horkelia tenuiloba)* | Perennial herb that occurs in sandy soils in open chaparral (CNPS 2023b).<br>Elevation: 165-1640 feet.<br>Flowering Season: April-July | --/--/1B.2 | **Unlikely to occur.** Suitable habitat is absent in the BSA. Sandy soils within the BSA do not occur in habitats mapped as chaparral. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Thurber's reed grass<br>(*Calamagrostis crassiglumis)* | Perennial grasslike herb that occurs in coastal scrub and freshwater wetlands (CNPS 2023b).<br>Elevation: <195 feet.<br>Flowering Season: March–July | --/--/2B.1 | **No potential to occur.** Suitable habitat is absent in the BSA. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Tiburon buckwheat<br>(*Eriogonum luteolum* var. *caninum*) | Annual herb that occurs in gravelly, sandy or serpentinite areas of chaparral, cismontane woodland, coastal prairie, valley and foothill grassland (CNPS 2023b).<br>Elevation: <700 meters.<br>Flowering Season: May–September | --/--/1B.2 | **Unlikely to occur.** Suitable habitat is present in the BSA. However, there are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
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| Two-fork clover<br>*(Trifolium amoenum)* | Annual herb that occurs usually in wetlands, occasionally in non-wetlands including coastal bluff scrub, valley, and foothill grassland. Sometimes occurs in serpentinite areas (CNPS 2023b).<br>Elevation: <1360 feet.<br>Flowering Season: April–June | FE/--/1B.1 | **Likely to occur.** Marginal suitable habitat is present in the BSA. There are records of this species in the vicinity of Bloomfield Rd., Nuns Canyon Rd. and King Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 2002 that is located 1.32 miles west of Bloomfield Rd. The record was found within coastal bluff grassland.<br>• There is one record of this species from 1928 that is located 1.06 miles northwest of Nuns Canyon Rd. The exact location of this record is unknown.<br>• There is one record of this species from 1938 that is located 1.25 miles northwest of King Rd. The exact location of this record is unknown.<br>A roadside wetland is present along Bloomfield Rd. |
| Vine Hill ceanothus<br>*(Ceanothus foliosus* var. *vineatus)* | Shrub that occurs in chaparral areas (CNPS 2023b).<br>Elevation: 150–1000 feet.<br>Flowering Season: March–May | --/--/1B.1 | **Unlikely to occur.** Suitable chaparral habitat is present in the BSA. There is one record of this species from 1938 that is located within Morelli Ln. The exact location of this record is unknown (CDFW 2023a). However, suitable chaparral habitat is not present at this road segment. |
| Vine Hill clarkia<br>*(Clarkia imbricata)* | Annual herb that occurs in chaparral and valley grassland. Can be found growing in acidic, loamy, or sandy soils (CNPS 2023b).<br>Elevation: 165–245 feet.<br>Flowering Season: June–August | FE/SE/1B.1 | **Unlikely to occur.** Suitable habitat is present in the BSA. However, there are no records of this species in the vicinity of any of the road segments (CDFW 2023a). This species is known only from single population near Vine Hill (CNPS 2023b). |
| Vine Hill manzanita<br>(*Arctostaphylos densiflora)* | Shrub that occurs in chaparral where acidic marine sand is present (CNPS 2023b).<br>Elevation: 165–395 feet.<br>Flowering Season: March–April | --/SE/1B.1 | **No potential to occur.** Suitable habitat is absent in the BSA. Acidic marine sandy soils within the BSA do not occur in habitats mapped as chaparral. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| White beaked-rush<br>*(Rhynchospora alba)* | Perennial grass like herb that occurs in boggy open areas, and freshwater wetlands (CNPS 2023b).<br>Elevation: 195–6695 meters.<br>Flowering Season: July–August | --/--/2B.2 | **No potential to occur.** Suitable habitat is absent in the BSA. There are no records of this species in the vicinity of any of the road segments (CDFW 2023a). |
| Woolly-headed gilia<br>*(Gilia capitata* ssp. *tomentosa)* | Annual herb that occurs in sea bluffs and serpentine outcrops (CNPS 2023b).<br>Elevation: <720 meters.<br>Flowering Season: May–July | --/--/1B.1 | **Unlikely to occur.** Suitable habitat is absent in the BSA. There is one record of this species from 1947 that is located within Morelli Ln. The exact location of this record is unknown (CDFW 2023a). |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
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| ***Animals*** | | | |
| **Invertebrates** | | | |
| California freshwater shrimp *(Syncaris pacifica)* | Occurs in low elevation, low gradient, freshwater streams in Marin, Napa, and Sonoma counties, California. | FE/SE | **Unlikely to occur.** Suitable habitat is present within Calabazas Creek, however Calabazas lies outside the project footprint. There is occurrences of this species in the vicinity of Sonoma Mtn. Rd., Morelli Ln. and Nuns Canyon Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 2013 that is located 1.96 miles northeast of Sonoma Mtn. Rd. Habitat for this record consisted of exposed bedrock and deep pools.<br>• There is one record of this species from 2017 that is located 1.09 miles northwest of Morelli Ln. Habitat for this record consisted of mature riparian canopy and pools along creek. Streambed mostly silt/sand with some gravel/boulders.<br>• There is one record of this species from 2013 that is located 1.64 miles west of Nuns Canyon Rd. Habitat at this site consists of exposed bedrock and deep pools; uncut banks are relatively uncommon. |
| Monarch butterfly (*Danaus plexippus*) | Occurs along coast from northern Mendocino to Baja California, Mexico. Winter roosts in wind-protected tree groves (eucalyptus, Monterey pine, and cypress), with nectar and water sources nearby. | FC/-- | **Unlikely to occur.** Suitable habitat may be present within heavily forested sites, however there are no known overwintering monarch populations in the vicinity of any of the road segments. |
| Western bumble bee (*Bombus occidentalis*) | In California, populations are currently restricted to high elevation sites in Sierra Nevada, though there have been few observations on northern California coast (Xerces Society 2021). Basic habitat requirements include suitable nesting sites for colonies, nectar and pollen from floral resources available throughout duration of colony period (spring, summer and fall), and suitable overwintering sites for queens (USFS 2023). | --/SC | **Unlikely to occur.** Suitable habitat may be present in the BSA; however, this species is believed to be largely extirpated from the coastal California and restricted to higher elevations (CDFW 2023a). There are occurrences of this species in the vicinity of Casa Grande Rd., Corona Rd., Santa Rosa Ave. and Nuns Canyon Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 1965 that is located 1.67 miles southwest of Casa Grande Rd. Exact location for this record is unknown.<br>• There is one record of this species from 1965 that is located 1.31 miles southeast of Corona Rd. Exact location for this record is unknown.<br>• There is one record of this species from 1986 that is located 0.61 mile west of Santa Rosa Ave. |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
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| | | | • There is one record of this species from 1962 that is located 1 mile northwest of Nuns Canyon Rd. Exact location for this record is unknown. |
| **Mammals** | | | |
| American badger *(Taxidea taxus)* | Occurs in a variety of habitats throughout California including dry open shrubland, grassland, forest, and herbaceous habitats with friable soils. | --/SSC | **Unlikely to occur.** Marginal grassland habitat can be found the BSA, however this species is unlikely to den adjacent to busy roadways. There are occurrences in the vicinity of King Rd., Corona Rd. and Woodward Ave. (CDFW 2023a). No badger sign was observed during reconnaissance-level surveys.<br>The closest records to the project for each road segment are as follows:<br>• There are 2 records of this species within 2 miles of the King Rd. project area. The nearest and most recent record is from 2007 and is located 1.13 miles northeast of the project area. The record was seen in non-native grassland with low canopy oak woodland.<br>• There are 3 records of this species within 2 miles of the Corona Rd. project area. The nearest and most recent record is from 2016 and is located 0.83 mile southeast of the project area. The record was seen roadside, bordered by agriculture and urban land use.<br>• There is one record of this species from 2006 that is located 1.3 miles southwest of Woodward Ave. Habitat surrounding the record included grassland and agriculture. |
| Salt-marsh harvest mouse *(Reithrodontomys raviventris)* | Occurs in tidal marshes along the central coast of California. | FE/SE,FP | No potential. Suitable tidal marsh habitat for this species is absent in the BSA. There is one record of this species from 1990 that is located 1 mile southwest of Casa Grande Rd. The record was found within the Petaluma River marsh (CDFW 2023a). |
| Sonoma tree vole *(Arborimus pomo)* | Occurs in old-growth Douglas-fir forests in northwest California. | --/SSC | Likely to occur. Suitable habitat is present along Fort Ross Rd and Morelli Ln. There is one record of this species from 1995 that is located within the Morelli Ln. project area (CDFW 2023a). |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
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| Townsend's big-eared bat *(Corynorhinus townsendii)* | Occur throughout most of California, including deserts, coastal redwood forests, and forests and woodlands in the Coasts Ranges and Sierra Nevada. | --/SSC | Unlikely to occur. Marginal suitable roosting habitat is present within the BSA. There are occurrences in the vicinity of Casa Grande Rd. and Corona Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 1938 that is located 1.67 miles southwest of Casa Grande Rd. Exact location for this record is unknown.<br>• There is one record of this species from 1938 that is located 1.31 miles southeast of Corona Rd. Exact location for this record is unknown. |
| Western red bat *(Lasiurus frantzii)* | Occur in trees in riparian habitat, roosting in sycamore, cottonwood, velvet ash, and elder trees. Also, commonly inhabit fruit and nut orchards. | --/SSC | Unlikely to occur. Marginal suitable roosting habitat is present within the BSA. There is one record of this species from 2015 that is located 0.05 mile west of Bloomfield Rd. (CDFW 2023a). |
| **Amphibians** | | | |
| California giant salamander *(Dicamptodon ensatus)* | Occurs in wet coastal forests in or near clear, cold permanent and semi-permanent streams and seepages. | --/SSC | **Likely to occur.** Suitable habitat is present within the South Fork Gualala River, Calabazas Creek and Matanzas Creek. Therefore, there is potential for this species to occur within the project footprint, especially following heavy rains. There are occurrences of this species in the vicinity of Fort Ross Rd., Nuns Canyon Rd., Sonoma Mtn. Rd. and Morelli Ln. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There are 7 records of this species within 2 miles of the Fort Ross Rd. project area. The nearest record is from 1913 and is located within the project area. The most recent record is from 2016 and is located 1.34 miles southeast of Fort Ross Rd. Record was seen in grassland with coyote bush.<br>• There is one record of this species from 2014 that is located 1.36 miles northeast of Nuns Canyon Rd. The record was seen within Stuart Creek.<br>• There is one record of this species from 2016 that is located 1.75 miles southeast of Sonoma Mtn. Rd. The record was seen under logs in mature oak woodland.<br>• There is one record of this species from 2013 that is located 1.12 miles northwest of Morelli Ln. The record was seen at the confluence of Grab Creek at Butch Bill Creek. |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
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| California red-legged frog *(Rana draytonii)* | Inhabits permanent and temporary pools, streams, freshwater seeps, and marshes in lowlands and foothills occurring from sea level to 6,500 feet. Uses adjacent upland habitat for foraging and refuge. Breeds during wet season from December–March. Lays between 300 and 4,000 eggs in large cluster attached to plants near water surface. Eggs hatch after about 4 weeks and undergo metamorphosis in 4–7 months. | FT/SSC | **Likely to occur.** Suitable stream or pond habitat is present within vicinity of Bloomfield Rd., Fort Ross Rd., King Rd., Lichau Rd., Sonoma Mtn. Rd., and Casa Grande Rd. Therefore, there is potential for this species to occur within the project footprint, especially following heavy rains. There are occurrences of this species in the vicinity of Bloomfield Rd., King Rd., Lichau Rd., Sonoma Mtn. Rd., Casa Grande Rd. Corona Rd., and Santa Rosa Ave. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one non-specific record of this species from 2004 that is located within Bloomfield Rd. The record was seen within creek banks lined by forbs and grasses, adjacent to grazed pasture.<br>• There are 7 records of this species within 2 miles of the King Rd. project area. The nearest and most recent record is from 2016 and is located 0.88 mile southeast of the project area. The record was seen within a small ephemeral creek with dense and patchy willow riparian.<br>• There is one record of this species from 2016 that is located 1.25 miles east of Lichau Rd. The record was seen in a large pond filled with sediment and tules within pastureland.<br>• There are 8 records of this species within 2 miles of the Sonoma Mtn. Rd. project area. The nearest record is from 2013 and is located 0.4 mile east of the project area. The most recent record is from 2013 and is located 1.66 miles southeast of the project area. The record was seen near the head of Copeland Creek on Sonoma Mountain.<br>• There is one record of this species from 1994 that is located 1.73 miles southwest of Casa Grande Rd. The record was seen in a small stream, flowing into Petaluma Marsh with some saltwater intrusion.<br>• There is one record of this species from 2001 that is located 1.31 miles southeast of Corona Rd. The record was seen in a seasonal flood control channel with sandy/loam banks vegetated by grasses.<br>• There is one record of this species from 2016 that is located 1.25 miles east of Santa Rosa Ave. The record was seen in a small pond on Taylor Mountain Park in woodland.<br>Human-made barriers prevent dispersal within highly urbanized road segments including Corona Rd., Santa Rosa Ave., and Woodward Ave., however. |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| California tiger salamander - Sonoma County DPS (*Ambystoma californiense*) | Occurs in fishless vernal pools or similar water bodies and it occurs at elevations up to 1000 meters. The juveniles and adults live in grasslands and oak woodlands, mainly living underground in the burrows of rodents. | FE/ST | **Likely to occur.** Suitable breeding ponds are present in the vicinity of Casa Grande Rd., Lichau Rd. and King Rd. Suitable wetland habitat is present in the vicinity of Petaluma Hill Rd and Bloomfield Rd. Therefore, there is potential for this species to occur within the project footprint, especially following heavy rains.<br><br>There are occurrences of this species in the vicinity of Casa Grande Rd., Bloomfield Rd., Corona Rd., King Rd., Lichau Rd., Santa Rosa Ave., Petaluma Hill Rd., and Woodward Ave. (CDFW 2023a).<br><br>The closest records to the project for each road segment are as follows:<br>• There is one non-specific record of this species from 1856 that is located within both Casa Grande Rd. and Corona Rd Rd.<br>• There are 4 records of this species within 2 miles of the King Rd. project area. The nearest record is from 1856 and is located within the project area. The most recent record is from 2022 and is located 1.8 miles northwest of the project area. The record was seen roadside during winter surveys.<br>• There are 2 records of this species within 2 miles of the:Lichau Rd. project area. The nearest and most recent record is from 1972 and is located 1.5 miles southwest of the project area. The record was seen along the roadside.<br>• There are 41 records of this species within 2 miles of the Santa Rosa Ave. project area. The nearest record is from 2002 and is located within the project area. The most recent record is from 2019 and is located 0.25 mile west of the project area. The record was seen at ponded drainage and vernal swale, surrounded by grazed non-native grassland.<br>• There is one record of this species from 2019 that is located 1.66 miles northwest of Petaluma Hill Rd. The record was seen during pitfall trapping at seasonal wetland conservation bank.<br>• There are 4 records of this species within 2 miles of the Woodward Ave. project area. The nearest record is from 1856 and is located within the project area. The most recent record is from 2019 and is located 1.73 miles northwest of the project area. The record was seen in a deep ditch that was hydrologically connected to a large, man-made pond.<br><br>Human-made barriers prevent dispersal within highly urbanized road segments including Corona Rd., Santa Rosa Ave., and Woodward Ave., however.<br><br>The southern half of the Santa Rosa Ave. work area (south of Bellevue Ave.) lies within critical habitat for California tiger salamander. The northern end of the King Ave. work area also lies |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
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| | | | adjacent to this same critical habitat block. Additionally, the work areas of Woodward Ave. are located within 300 ft., respectively of this critical habitat block (USFWS 2023). |
| Foothill yellow-legged frog - north coast DPS<br>*(Rana boylii)* | Occurs in foothill and mountain streams from Oregon to Los Angeles County, California. This species is often found in or near rocky streams in a variety of habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow types (CDFW 2023c). | --/SSC | **Likely to occur.** Suitable stream habitat is present in the vicinity of Casa Grande Rd., Fort Ross Rd., King Rd., Lichau Rd., Morelli Ln., Petaluma Hill Rd., Nuns Canyon and Sonoma Mtn. Rd. Therefore, there is potential for this species to occur within the project footprint, especially following heavy rains. There are occurrences of this species in the vicinity of Casa Grande Rd., Fort Ross Rd., King Rd., Lichau Rd., Morelli Ln., Petaluma Hill Rd., Nuns Canyon Sonoma Mtn. Rd., Woodward Ave. and Corona Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There are 3 records of this species within 2 miles of the Casa Grande Rd. project area. The nearest record is from 1998 and is located within the project area. The most recent record is from 2019 and is located 0.87 mile southwest of the project area. The record was seen within a channelized creek with restored riparian vegetation.<br>• There are 4 records of this species within 2 miles of the Fort Ross Rd. project area. The nearest record is from 1913 and is located within the project area. The most recent record is from 2018 and is located 0.9 mile northeast of the project area. The record was seen along Ward Creek from confluence with Big Oak Creek.<br>• There is one record of this species from 1987 that is located 1.6 miles east of King Rd. The record was seen in the vicinity of Lichau Creek.<br>• There are 6 records of this species within 2 miles of the:Lichau Rd. project area. The nearest record is from 2002 and is within the project area. The most recent record is from 2013 and is located 1.8 miles northeast of the project area. The record was seen along Copeland Creek in Fairfield Osborn Preserve, west of Rohnert Park.<br>• There are 2 records of this species within 2 miles of the Morelli Ln. project area. The nearest record is from 1967 and is located within the project area. The most recent record is from 2018 and is located 1.2 miles northeast of the project area. The record was seen within Green Valley Creek.<br>• There are 4 records of this species within 2 miles of the Petaluma Hill Rd. project area. The nearest record is from 2002 and is located 0.2 mile south of the project area. The most recent record is from 2017 and is located 0.95 mile southwest of the project area. The record was seen within a |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
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| | | | channelized urban creek that is a sedimentation detention basin that fills annually with gravel from winter flooding.<br>• There are 2 records of this species within 2 miles of the Nuns Canyon Rd. project area. The nearest record is from 2002 and is located 0.5 mile east of the project area. The most recent record is from 2014 and is located 1.38 miles southeast of the project area. The record was seen within Stuart Creek.<br>• There is one record of this species from 2013 that is located 1.84 miles east of Sonoma Mtn. Rd. The record was seen at a road crossing on Copeland Creek under a PG&E high voltage line.<br>• There is one record of this species from 1987 that is located within the Woodward Ave. project area. The record was seen in the vicinity of Lichau Creek.<br>• There is one record of this species from 1987 that is located 1.1 miles east of Corona Rd. The record was seen in the vicinity of Lichau Creek.<br>Human-made barriers prevent dispersal within highly urbanized road segments, including Corona Rd., Santa Rosa Ave. and Woodward Ave., however. |
| Red-bellied newt<br>*(Taricha rivularis)* | Occurs in coastal woodlands and redwood forests from Sonoma County to Humboldt County. Inhabits primarily redwood forest, but also found within mixed conifer, valley-foothill woodland, montane hardwood and hardwood-conifer habitats (CDFW 2023c). The adults are terrestrial, but migrate to streams during fall and winter rains for aquatic breeding. Adults spend the dry summer months under woody debris, and inside of animal burrows (California Herps 2023). | --/SSC | **Likely to occur.** Suitable riparian woodland habitat is present within the vicinity of Casa Grande Rd., Fort Ross Rd., Nuns Canyon and Sonoma Mtn. Rd. Therefore, there is potential for this species to occur within the project footprint, especially following heavy rains. There are occurrences of this species in the vicinity of Casa Grande Rd., Corona Rd, Fort Ross Rd., and Nuns Canyon (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from an unknown date that is located 1.67 miles southwest of Casa Grande Rd. Exact location for this record is unknown.<br>• There is one record of this species from an unknown date that is located 1.31 miles southeast of Corona Rd. Exact location for this record is unknown.<br>• There is one record of this species from 1957 that is located within the Fort Ross Rd. project area. Exact location for this record is unknown.<br>• There is one record of this species from 1977 that is located 0.66 miles southeast of Nuns Canyon Rd. Exact location for this record is unknown. |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
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| **Reptiles** | | | |
| Western pond turtle *(Emys marmorata)* | Occurs in lakes, ponds, rivers, streams, marshes, and reservoirs. Need terrestrial habitats for nesting, foraging, and mating. Prefer habitats with logs or boulders where they can bask. They are found from Washington state to northern Baja California. | --/SSC | **Unlikely to occur.** Suitable stream habitat is present within the vicinity of Corona Rd. and Bloomfield Rd. However, project activities are unlikely to impact these stream habitats. There are occurrences of this species in the vicinity of Bloomfield Rd., Casa Grande Rd., Corona Rd Santa Rosa Ave., and Woodward Ave. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 2012 located 0.12 mile east of Bloomfield Rd. This record was found within a perennial creek and man-made pond with annual grassland used for cattle grazing.<br>• There is one record of this species from 2004 located within the Casa Grande Rd. project area. This record covers a large area and does not have any specific location details. Habitat associated with the record consisted of slow-moving stream, vegetated by cattails and emergent vegetation. Stream banks consist mostly of exposed soil with easy access to water.<br>• There are 3 records of this species within 2 miles of the Corona Rd. project area. The nearest and most recent record is from 2007 and is located 1.7 miles northwest of the project area. The habitat for this record consisted of sluggish, low-gradient stream, with limited riparian vegetation within a managed flood channel.<br>• There are 4 records of this species within 2 miles of the Santa Rosa Ave. project area. The nearest record is from 2004 and is located 0.41 mile southeast of the project area. The most recent record is from 2009 and is located 1.9 miles northwest of the project area. The record was found on the west side of Burbank Ave. outside of a suburban home buried under redwood and oak leaf duff.<br>• There are 2 records of this species within 2 miles of the Woodward Ave. project area. The nearest record is from 2006 and is located within the project area. The most recent record is from 2007 and is located 1.48 miles southwest of the project area. The habitat for this record consisted of sluggish, low-gradient stream, with limited riparian vegetation within a managed flood channel.<br>Human-made barriers prevent dispersal within highly urbanized road segments including Corona Rd., Santa Rosa Ave. and Woodward Ave., however. |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| Green sea turtle (*Chelonia mydas*) | Occurs in marine environments with an adequate supply of seagrasses and algae. | FT/-- | **No potential.** Suitable habitat is not present along any of the road segments. |
| **Fish** | | | |
| Coho salmon – central California coast ESU *(Oncorhynchus kisutch)* | Occur in small coastal streams and large rivers in watersheds along the west coast. The central California coast ESU refers to populations that occur between Punta Gorda and San Lorenzo River. Coho Salmon typically inhabit small coastal streams, as well as larger rivers. Within northern California coastal drainages, Coho salmon seem to be associated with low gradient reaches of tributary streams, which provide suitable spawning areas and good juvenile rearing habitat. (Moyle 2002). | FE/SE | **Likely to occur.** Suitable stream habitat is present along Fort Ross Road. There are 2 records are of this species within a 2 miles of near Morelli Ln. (CDFW 2023a). The nearest and most recent record is from 2015 and is 0.84 mile northwest of Morelli Ln. The record was found within Dutch Bill Creek, although exact location is unknown. There is critical habitat for coho salmon within North Fork Lancel Creek, and the South Fork Gualala River (NMFS 2023). However, North Fork Lancel Creek was dry during the October 2023 field survey. Project culvert replacement activities along Fort Ross Rd. may impact salmonid habitat. |
| Sacramento splittail (*Pogonichthys macrolepidotus)* | Endemic to the lakes and rivers of the Central Valley, but now confined to the Delta, Suisun Bay and associated marshes. Occurs within slow moving river sections, dead end sloughs. Requires flooded vegetation for spawning and foraging for young. | --/SSC | **Unlikely to occur.** Suitable stream habitat is present. There is one record of this species from 1990 located 1.46 miles southeast of Corona Rd. (CDFW 2023). Corona Rd. crosses the Petaluma River. However, project activities are unlikely to impact the Petaluma River. |
| Steelhead – central California coast DPS *(Oncorhynchus mykiss irideus)* | Occurs from Alaska to Baja California in streams below 8,000 feet. Central California coast DPS includes all naturally spawned populations of steelhead (and their progeny) in streams from the Russian River to Aptos Creek, Santa Cruz County, California (inclusive). Also includes the drainages of San Francisco and San Pablo Bays. Steelhead are anadromous and spend a portion of their life cycle in the Pacific Ocean before returning upstream to spawn. Requires beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water and sufficient dissolved oxygen (Moyle 2002). | FT/-- | **Likely to occur.** This species was observed by SWCA in Calabazas Creek which runs parallel to Nuns Canyon Rd. However, the Calabazas Creek lies outside the project footprint. Suitable habitat is also present along Fort Ross Rd. in which steelhead has also been documented within the South Fork Gualala River, downstream of the Fort Ross Rd. segment (CDFW 2023).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 2014 located 1.35 miles southeast of Nuns Canyon Rd. This record was found within Stuart Creek.<br>• There is one record of this species from 2010 located within the Fort Ross Rd. project area. This record was found within the Gualala River and its tributaries between Jenner and Point Arena.<br>There is critical habitat for steelhead within North Fork Lancel Creek, South Fork Gualala River, Petaluma River, Adobe Creek and Calabazas Creek (NMFS 2023). However, Adobe Creek and North Fork Lancel Creek were dry during the October 2023 field survey. Project activities are unlikely to impact the Petaluma River. |
| Tidewater goby (*Eucyclogobius newberryi*) | Occurs in brackish shallow lagoons and lower stream reaches where water is still, but not stagnant. | FE/CSC | **No potential.** Suitable habitat is not present along any of the road segments. |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| **Birds** | | | |
| Bank swallow *(Riparia riparia)* | Occur near water in fields, marshes, streams, and lakes. Nests in colonies in vertical banks of dirt or sand, usually along rivers or ponds, seldom away from water. | FT/-- | **Unlikely to occur.** Suitable habitat is present along Adobe Creek along Casa Grande Rd. However, this feature is unlikely to be impacted by project activities. There is one record of this species from 1893 located 0.58 mile east of Casa Grande Rd. (CDFW 2023a). |
| Burrowing owl *(Athene cunicularia)* | Occur in flat open habitat with sparse vegetation, short grass, and bare soil such as prairies, grasslands, desert, and sagebrush environments. They live in burrows that they dig themselves or take over from other animals. | --/SSC | **Unlikely to occur.** Suitable habitat is present within the BSA, however suitable burrows were not observed along any of the road segments. There are records of this species in the vicinity of Bloomfield Rd., Lichau Rd., Petaluma Hill Rd. and Sonoma Mtn. Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 1986 located 1.45 miles west of Bloomfield Rd.<br>• There is one record of this species from 2002 located 1.18 miles northwest of Lichau Rd. The habitat associated with this record consists of open grasslands and agricultural crops.<br>• There is one record of this species from 2002 located within the Petaluma Hill Rd. project area. The habitat associated with this record consists of open grasslands and agricultural crops.<br>• There is one record of this species from 2015 located 1.72 miles southeast of Sonoma Mtn. Rd. The habitat associated with this record consists of mountain grassland dominated by Harding grass. |
| California black rail *(Laterallus jamaicensis coturniculus)* | Occur in tidal salt marshes of the northern San Francisco Bay region, primarily in San Pablo and Suisun Bays. | ST/FP | **Unlikely to occur.** Suitable habitat is absent in the BSA. There are 2 records of this species within a 2 mile radius of the Casa Grande Rd. project area. The nearest record is from 2012 and is located 1.48 miles south of the project area. The most recent record is from 2015 and is located 1.85 miles southeast of the project area. The habitat associated with this record consisted of tidal salt marsh adjacent to sewage ponds (CDFW 2023a). |
| California clapper rail *(Rallus longirostris obsoletus)* | Occur in coastal salt marshes where dense strands of cordgrass are present. Require shallow water and mudflats for foraging. | FE/SE,FP | **No potential.** Suitable habitat is not present along any of the road segments. |
| California least tern (*Sternula antillarum browni*) | Largely coastal species that feeds on fish and nests on sandy dunes or beaches. Once common in California; currently nesting colonies are isolated to southern California and scattered Bay Area beaches. | FE/SE/-- | **No potential.** Suitable habitat is not present along any of the road segments. |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| Golden eagle (*Aquila chrysaetos*) | Occur in nearly all terrestrial habitats of the western states except for dense forest. In the interior central Coast Ranges of California, golden eagles favor open grasslands and oak savanna. | --/FP | **Unlikely to occur.** Suitable foraging and nesting habitat is limited, within the BSA. There is one record of this species from 2015 located 1.75 miles southeast from Sonoma Mtn. Rd. Habitat for this record consists of oak savanna/oak woodland (CDFW 2023a). |
| Marbled murrelet (*Brachyramphus marmoratus marmoratus*) | Spends most of non-breeding season in offshore or nearshore environments near coniferous forests. Typically nests in upper branches of redwoods or Douglas fir forests. Builds nests with lichens and mosses. | FT/SE | **Unlikely to occur.** Suitable habitat is present along Fort Ross Rd. There are no recent records of this species of the vicinity, however. The nearest record of this species is located approximately 13 miles northwest of the BSA (CDFW 2023a). |
| Northern spotted owl (*Strix occidentalis caurina*) | Occurs within old-growth forests or mixed stands of old-growth and mature trees. Ideal forest habitat consists of high, multistory canopy dominated by big trees, with cavities or broken tops, woody debris, and space under canopy. Occasionally occurs in younger forests with patches of big trees, such as redwoods. | FT/-- | **Likely to occur.** Suitable forested habitat containing large trees is present along Fort Ross Rd., Morelli Ln., Sonoma Mtn. Rd., and Nuns Canyon Rd. There are records of this species in the vicinity of Fort Ross Rd., Morelli Ln., Sonoma Mtn. Rd., and Nuns Canyon Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• The nearest positive record was observed in 1992 located 1.60 miles southwest of Fort Ross Rd. (OBSID 99085).<br>• The nearest positive record was observed in 2016 located 0.06 mile south of Morelli Ln. (OBSID 161963).<br>• The nearest positive record was observed in 1990 located 2 miles southeast of Sonoma Mtn. Rd. (OBSID 98249).<br>• The nearest positive record was observed in 1990 located 1.6 miles southeast of Nuns Canyon Rd. (OBSID 98215). |
| Saltmarsh common yellowthroat (*Geothlypis* trichas *sinuosa*) | Frequent low, dense vegetation near water, especially marshes and wetlands. Nest usually placed on or within 8 centimeters (3 inches) of ground. May be over water, in emergent aquatic vegetation, dense shrubs, or other dense growth. | --/SSC | **Likely to occur.** Marginal suitable habitat is present within the BSA. There is one record of this species from 1985 located 1.36 miles southwest of Casa Grande Rd. Habitat for this record consists of coastal brackish marsh (CDFW 2023a). |
| San Pablo song sparrow *(Melospiza melodia samuelis)* | Occurs in tidal marshes of the San Francisco Bay Estuary. | --/SSC | **Unlikely to occur.** Suitable habitat is absent in the BSA. There is one record of this species from 1940 located 1.03 miles southwest of Casa Grande Rd. (CDFW 2023a). |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| Tricolored blackbird *(Agelaius tricolor)* | Largely endemic to California, being most numerous in Central Valley and vicinity. Occurs in cattail or tule marshes and forages in open fields and farms. A highly colonial species, tricolor blackbird is known to nest in dense shrub thickets such as blackberry. | --/ST, SSC | **Likely to occur.** Suitable foraging habitat is present within the vicinity of the Lichau Rd. and Petaluma Hill Rd. Suitable nesting habitat is present adjacent to these sites. There are records of this species within the vicinity of Lichau Rd. and Petaluma Hill Rd. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 2015 located 0.93 mile northwest of Lichau Rd. Habitat for this record consisted of blackberry, willows, and thistles along the bank of Copeland Creek.<br>• There is one record of this species from 2015 located 0.18 mile southwest of Petaluma Hill Rd. Habitat for this record consisted of blackberry, willows, and thistles along the bank of Copeland Creek.<br>There are numerous recent occurrences of this species, throughout Sonoma County (Cornell Lab of Ornithology 2023). |
| Western snowy plover (*Charadrius alexandrinus nivosus*) | Found in shores, peninsulas, offshore islands, bays, estuaries, and rivers along Pacific Coast. Breeding sites entail coastal beaches above high-tide line, sand spits, dune-backed beaches, and river bars. | FT, MBTA/SSC | **No potential.** Suitable habitat is not present along any of the road segments. |
| Western yellow-billed cuckoo *(Coccyzus americanus occidentalis)* | Occurs along low to moderate elevation native forests along rivers and streams. Nests within riparian thickets or forests with dense, low-level understory foliage. | FT/SE | **Unlikely to occur.** Suitable nesting and foraging habitat is present along riparian areas within the BSA. There are records of this species within the vicinity of Lichau Rd., Sonoma Mtn. Rd. Petaluma Hill Rd. Santa Rosa Ave. (CDFW 2023a).<br>The closest records to the project for each road segment are as follows:<br>• There is one record of this species from 1975 located within the Lichau Rd. project area.<br>• There is one record of this species from 1975 located 1.65 miles southwest of Sonoma Mtn. Rd.<br>• There is one record of this species from 1975 located 1.43 miles southeast of the Petaluma Hill Rd.<br>• There is one record of this species from 1972 located 1.25 miles southwest of the Santa Rosa Ave.<br>However, none of these records are not recent. The nearest recent occurrence is located near Bodega Bay (Cornell Lab of Ornithology 2023). |

| Species Name | General Habitat Description | Legal Status Federal/State/ CNDDB Status | Potential for Occurrence and Rationale |
|---|---|---|---|
| White-tailed kite *(Elanus leucurus)* | Occurs in open grasslands with scattered trees for nesting and perching. | --/FP | **Likely to occur.** Suitable nesting and foraging habitat is present within the BSA. There is one record of this species from 2003 located 0.87 mile northwest of Santa Rosa Ave. (CDFW 2023a). However, project activities are unlikely to impact nesting and foraging habitat along this segment or other road segments with suitable habitat. However, there are numerous recent occurrences of this species, throughout Sonoma County (Cornell Lab of Ornithology 2023). |

Sources: CNPS (2023a); CDFW (2023a); USFWS (2023a)

**Status Codes:**
-- = No status
Federal: FE = Federal Endangered; FT = Federal Threatened; FC = Federal Candidate; MBTA = Protected by Migratory Bird Treaty Act
State: SE = State Endangered; ST = State Threatened; SC = State Candidate; SR = State Rare; SSC = California Species of Special Concern; FP = Fully Protected

**California Native Plant Society:**
List 1B = Rare, threatened, or endangered in California and elsewhere
List 2 = Rare, threatened, or endangered in California, but more common elsewhere

**CNDDB Threat Code:**
_.1 = Seriously endangered in California (more than 80% of occurrences threatened / high degree and immediacy of threat)
_.2 = Fairly endangered in California (20–80% occurrences threatened)
_.3 = Not very endangered I California (<20% of occurrences threatened or no current threats known)

**Potential for Occurrence Ratings:**

| | |
|---|---|
| Present: | The species has been documented within the project area by a reliable observer during recent surveys and habitat has not significantly been degraded or eliminated since the observation was made (e.g., no habitat removal associated with a development). |
| Likely to occur: | The species has a strong likelihood to be present in the project area as indicated by factors such as habitat quality, proximity to known records, presence of suitable dispersal corridors, etc. The project area contains suitable habitat and is located within the elevational and geographic ranges of the species. |
| Unlikely to occur: | The species is not likely to occur in the project area. Potentially suitable habitat is present, but the project area may be outside of the species' elevational and/or geographic ranges, contain substantially degraded or fragmented habitat, lack recent occurrence records within dispersal distance, be isolated from known populations by barriers to migration/dispersal, and/or contain predators or invasive species that inhibit survival or occupation. |
| No potential: | The species is not expected to occur in the project area due to one or more of the following conditions: suitable habitat is absent from the project area, the project area is located substantially outside of the species' elevational and/or geographic ranges, or the species is restricted to or known to be present only within a specific area outside of the project area. |
| Absent: | The species is not expected to occur in the project area due to one or more of the following conditions: suitable habitat is absent from the project area, the project area is located substantially outside of the species' elevational and/or geographic ranges, or the species is restricted to or known to be present only within a specific area outside of the project area. |

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# APPENDIX D

# USFWS IPaC Species List

# APPENDIX E

## Species Observed

## Table E-1. Plants Species Observed

| Common Name | Scientific Name | Native/Introduced? |
|---|---|---|
| ***Trees*** | | |
| Bigleaf maple | *Acer macrophyllum* | N |
| Blue oak | *Quercus douglasii* | N |
| California bay laurel | *Umbellularia californica* | N |
| California black oak | *Quercus kelloggii* | N |
| California black walnut | *Juglans californica* | N |
| California buckeye | *Aesculus californica* | N |
| California sycamore | *Platanus racemosa* | N |
| Callery pear | *Pyrus calleryana* | I |
| Coast live oak | *Quercus agrifolia* | N |
| Coast redwood | *Sequoia sempervirens* | N |
| Douglas fir | *Pseudotsuga menziesii* | N |
| Eucalyptus | *Eucalyptus* sp. | I |
| Fremont's cottonwood | *Populus fremontii* | N |
| Oregon Ash | *Fraxinus latifolia* | N |
| Madrone | *Arbutus menziesii* | N |
| Monterrey cypress | *Hesperocyparis macrocarpa* | N |
| Tanoak | *Notholithocarpus densiflorus* | N |
| Valley oak | *Quercus lobata* | N |
| White alder | *Alnus rhombifolia* | N |
| ***Shrubs*** | | |
| Arroyo willow | *Salix lasiolepis* | N |
| California blackberry | *Rubus ursinus* | N |
| California red huckleberry | *Vaccinium parvifolium* | N |
| Coyote brush | *Baccharis pilularis* | N |
| Goodding's black willow | *Salix gooddingii* | N |
| Himalayan blackberry | *Rubus armeniacus* | I |
| Poison oak | *Toxicodendron diversilobum* | N |
| Sandbar willow | *Salix exigua* | N |
| Toyon | *Heteromeles arbutifolia* | N |
| ***Graminoids (Grass, Sedges, Or Rushes)*** | | |
| Sedge | *Carex sp.* | N |
| Sweet vernal grass | *Anthoxanthum odoratum* | N |
| Wild oat | *Avena* sp. | I |
| Ripgut brome | *Bromus diandrus* | I |
| Harding grass | *Phalaris aquatica* | I |
| Tall flatsedge | *Cyperus eragrostis* | N |
| Common rush | *Juncus effusus* | N |

| Common Name | Scientific Name | Native/Introduced? |
|---|---|---|
| Bulrush | *Typha* sp. | I |
| ***Forbs (Herbaceous Plants)*** | | |
| Little-robin | *Geranium purpureum* | N |
| Lady fern | *Athyrium* sp. | N |
| Pink honeysuckle | *Lonicera hispidula* | N |
| Stinkwort | *Dittrichia graveolens* | I |
| Stinging nettle | *Urtica dioica* | N |
| Common grape vine | *Vitis vinifera* | I |
| Fennel | *Foeniculum vulgare* | I |
| Milkthistle | *Silybum marianum* | N |
| Prickly lettuce | *Lactuca serriola* | I |
| Common cocklebur | *Xanthium strumarium* | I |
| English ivy | *Hedera helix* | I |
| Spicebush | *Calycanthus occidentalis* | N |
| Hayfield tarweed | *Hemizonia congesta* ssp. *lutescens* | N |
| Yellow star thistle | *Centaurea solstitialis* | I |

## Table E-2. Wildlife Species Observed

| Common Name | *Scientific Name* | *Native/Introduced?* |
|---|---|---|
| ***Birds*** | | |
| Acorn woodpecker | *Melanerpes formicivorus* | N |
| American crow | *Corvus brachyrhynchos* | N |
| Anna's hummingbird | *Calypte anna* | N |
| Bewick's wren | *Thryomanes bewickii* | N |
| Black-capped chickadee | *Poecile atricapillus* | N |
| California quail | *Callipepla californica* | N |
| California scrub jay | *Aphelocoma californica* | N |
| California towhee | *Melozone crissalis* | N |
| Common raven | *Corvus corvax* | N |
| Dark-eyed junco | *Junco hyemalis* | N |
| House finch | *Haemorhous mexicanus* | N |
| Northern mockingbird | *Mimus polyglottos* | N |
| Oak titmouse | *Baeolophus inornatus* | N |
| Red shouldered hawk | *Buteo lineatus* | N |
| Red-tailed hawk | *Buteo jamaicensis* | N |
| Steller's jay | *Cyanocitta stelleri* | N |
| Turkey vulture | *Cathartes aura* | N |
| Wild turkey | *Meleagris gallopavo* | I |
| ***Mammals*** | | |
| Black-tailed jackrabbit | *Lepus californicus* | N |
| Cow | *Bos taurus* | I |
| Mule deer | *Odocoileus hemionus* | N |
| Sheep | *Ovis aries* | I |
| Western gray squirrel | *Sciurus griseus* | N |
| ***Amphibians*** | | |
| Sierran treefrog | *Pseudacris sierra* | N |
| ***Reptiles*** | | |
| Western fence lizard | *Sceloporus occidentalis* | N |
| ***Fish*** | | |
| Steelhead trout | *Oncorhynchus mykiss irideus* | N |

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# APPENDIX F

## Biological Resources Maps

# APPENDIX G

## Critical Habitat Map

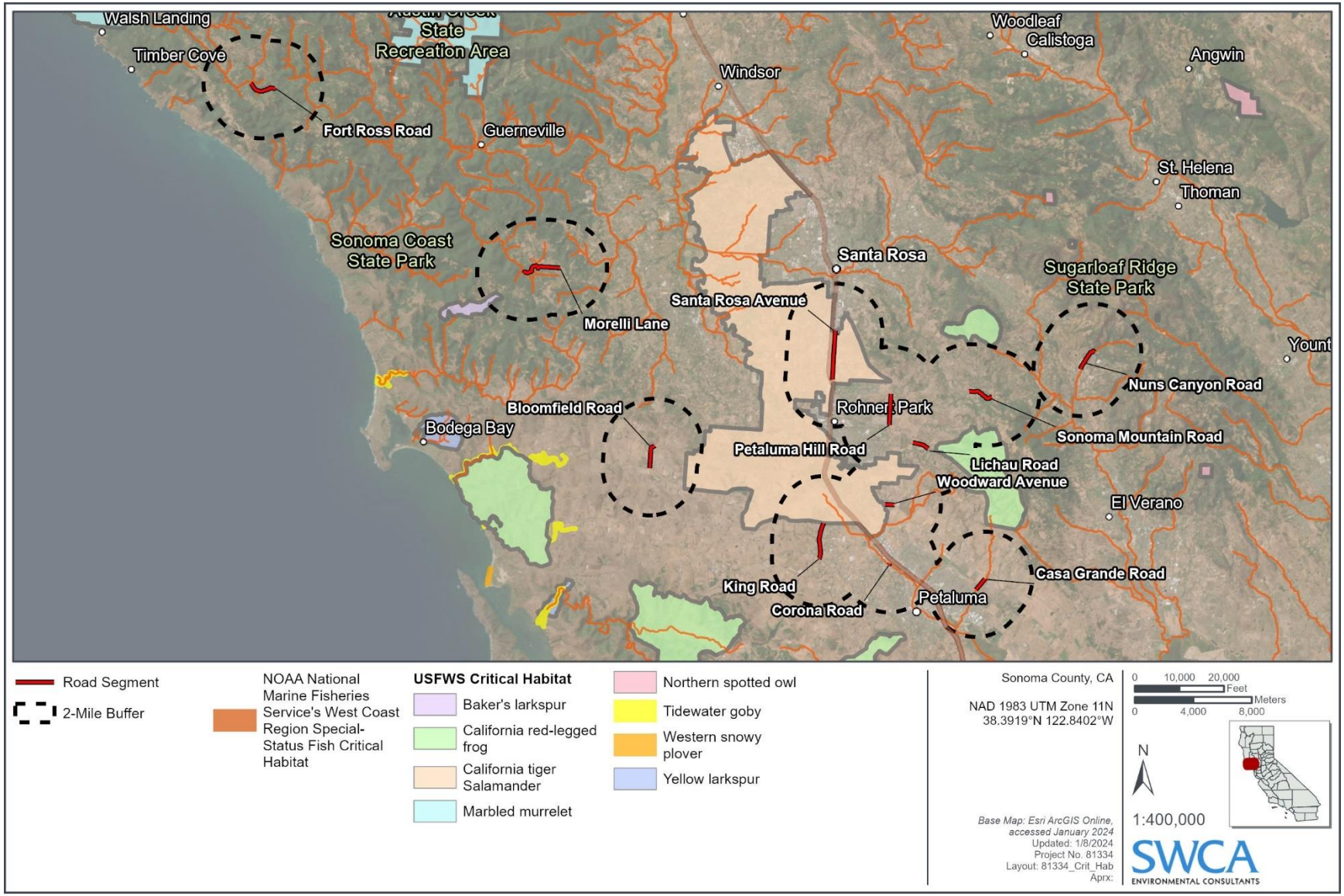


**Figure G-1. Critical Habitat Map.**

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# APPENDIX H

## Photo Documentation

**Photo A-1. Sonoma Mountain Road, facing southwest along the near east end of work area. Habitat consists of oak woodland. Photo taken 10/2/2023.**

**Photo A-2. Nun's Canyon Road, facing southwest. Oak woodland habitat is present along the right road shoulder. Riparian habitat is present along the left shoulder. Photo taken 10/3/2023.**

**Photo A-3. Woodward Avenue, facing west. Habitat consists of urban (residential) and oak woodland. Photo taken 10/3/2023.**

**Photo A-4. Casa Grande Road, facing east. Habitat consists of non-native grassland and urban (residential). Photo taken 10/4/2023.**

**Photo A-5. Fort Ross Road, facing west. Habitat consists of redwood forest along left shoulder and riparian habitat along right shoulder. Photo taken 10/3/2023.**

**Photo A-6. Morelli Lane, facing east. Habitat consists of mixed oak woodland. Photo taken 10/3/2023.**

**Photo A-7. Lichau Road, facing east. Habitat consists of vineyards along right shoulder and intensively managed hayfield along left shoulder. Photo taken 10/3/2023.**

**Photo A-8. Petaluma Hill Road, facing northeast. Habitat consists of non-native grassland and riparian habitat in background. Photo taken 10/4/2023.**

**Photo A-9. Bloomfield Road, facing north. Habitat consists of urban (residential) along left shoulder and riparian habitat along right shoulder. Photo taken 10/4/2023.**

**Photo A-10. King Road, facing north. Habitat consists of urban (residential) and non-native woodland. Photo taken 10/4/2023.**

**Photo A-11. Bloomfield Road, facing north. Habitat consists of urban (residential) along left shoulder and riparian habitat along right shoulder. Photo taken 10/4/2023.**

**Photo A-12. Arroyo willow riparian habitat, facing north along east shoulder of Corona Road. Photo taken 10/4/2023.**